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CARs

CANADIAN AVIATION REGULATIONS

PART VII - COMMERCIAL AIR SERVICES



Canada

1. 1940

2. 1941

3. 1942

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5. 1944



CARs

CANADIAN AVIATION REGULATIONS

PART VII - COMMERCIAL AIR SERVICES

SUBPART 0 - GENERAL

700

Canada

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NOTE

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RECORD OF AMENDMENTS *

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* All persons making use of this consolidation are reminded that it is not an “official” copy. The original regulations and amendments thereto, as published in Part II of the *Canada Gazette*, should be consulted for the purpose of officially interpreting and applying the regulations.

[illegible]

700 - GENERAL

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PART VII - COMMERCIAL AIR SERVICES

SUBPART 0 - GENERAL

DIVISION I - GENERAL

Interpretation

700.01 In this Part,

“all-cargo aeroplane” means an aeroplane that is equipped and used mainly for the carriage of goods; (*avion tout-cargo*)
(amended 2003/04/09)

“areas of operation” - means areas in which operations are conducted between points in Canada, between points in Canada and points abroad, and between points abroad; (*régions d'exploitation*)

“employed on a full-time basis” - means working for an air operator on a continuous basis for at least the number of hours required to carry out the duties of the position for the safe operation of the commercial air service; (*employé à temps plein*)

“extended charter” - means the charter of a Canadian commercial aircraft to a Canadian or foreign air operator for a period of 21 days or more in order to supplement the fleet of the charterer; (*affrètement de durée prolongée*)

“farmer” - means a person whose primary source of income is derived from the tillage of the soil, the raising of livestock or poultry, dairy farming, the growing of grain, fruit, vegetables or tobacco, or any other operation of a similar nature; (*agriculteur*)

“flight crew member on reserve” - means a flight crew member who has been designated by an air operator to be available to report for flight duty on notice of more than one hour;
(*membre d'équipage de conduite en réserve*)

“main base” means a location at which an air operator has personnel, aircraft and facilities for the conducting of aerial work or the operation of an air transport service and that is established as the principal place of business of the air operator; (*base principale*)
(amended 2009/05/28)

“net take-off flight path” - means the one-engine-inoperative flight path that starts at a height of 35 feet at the end of the take-off distance required and extends to a height of at least 1,500 feet AGL, reduced at each point by a gradient of climb equal to 0.8 per cent for two-engined aeroplanes, 0.9 per cent for three-engined aeroplanes and 1.0 per cent for four-engined aeroplanes; (*trajectoire nette de décollage*)

“operations between points abroad” - means air service operations that are conducted wholly outside Canada for any length of time; (*exploitation entre points à l'étranger*)

“sub-base” - means a location at which an air operator positions aircraft and personnel and from which operational control is exercised in accordance with the air operator’s operational control system; (*base secondaire*)

“types of operation” - means VFR, VFR at night and IFR operations; (*types de vols*)

“types of service” - means a domestic service, a scheduled international service, a non-scheduled international service and a sightseeing operation. (*types de service*)

Requirements for Air Operator Certificate

700.02 (1) No person shall operate an air transport service unless the person holds and complies with the provisions of an air operator certificate that authorizes the person to operate that service.

(2) Subject to subsections (3) and (4), no person shall, unless the person holds and complies with the provisions of an air operator certificate that authorizes the person to do so, operate an aeroplane or helicopter to conduct aerial work involving

- (a) the carriage on board of persons other than flight crew members;
- (b) the carriage of helicopter Class B, C or D external loads;
- (c) the towing of objects; or
- (d) the dispersal of products.

(3) A person who does not hold an air operator certificate may conduct aerial work involving the dispersal of products if

- (a) the person is a farmer;
- (b) the person owns the aircraft that is used to disperse the products;
- (c) the products are dispersed for agricultural purposes; and
- (d) the dispersal of the products takes place within 25 miles of the centre of the person’s farm.

(4) A person who does not hold an air operator certificate may conduct aerial work involving the carriage of persons other than flight crew members on board a single-engined aircraft if

- (a) the person holds a flight training unit operator certificate;
(amended 2004/02/24)

- (b) the pilot-in-command is the holder of a valid flight instructor rating in the appropriate category of aircraft;
(amended 1999/06/01)

- (c) the aircraft is operated in day VFR flight;
(amended 1999/06/01)

(d) there are no more than nine passengers on board; and
(amended 1999/06/01)

(e) the flight is conducted for the purpose of sightseeing operations.
(amended 1999/06/01)

***Authorization to Operate Specialty Air Service
under NAFTA***

700.03 (1) A person who is a citizen, permanent resident or corporation of the United States of America or Mexico and who is eligible to operate a specialty air service in Canada in accordance with Chapter 12 and Annex I - Canada of the *North American Free Trade Agreement* shall, prior to operating the service, obtain from the Minister an authorization to operate the service. The request for the authorization shall be in the form and shall contain the information specified in the *Commercial Air Service Standards*.

(2) The Minister may, on receipt of a request referred to in subsection (1) and where the requirements of the *Commercial Air Service Standards* are met, issue an authorization containing the conditions under which the specialty air service may be operated.

(3) An authorization referred to in subsection (1) is required in addition to an air operator certificate for those persons who are required to hold an air operator certificate pursuant to Subpart 2.

Eligibility for Air Operator Certificate

700.04 (1) A Canadian is eligible to hold an air operator certificate.

(2) A person who is a citizen, permanent resident or corporation of a foreign state is eligible to hold an air operator certificate that authorizes the person to operate an air transport service in Canada if the person

(a) holds a similar document of entitlement issued by the foreign state; and

(b) meets the requirements of Subpart 1.

(3) A person who is a citizen, permanent resident or corporation of the United States of America or Mexico is eligible to hold an air operator certificate that authorizes the person to conduct aerial work in Canada if

(a) the aerial work is a specialty air service for which the person may obtain an operating certificate in accordance with Chapter 12 and Annex I - Canada of the *North American Free Trade Agreement*; and

(b) the person meets the requirements of Subpart 2.

Aircraft Requirements

700.05 (1) Subject to subsection (3), no Canadian air operator shall operate an aircraft in a commercial air service unless
(amended 2002/03/01)

(a) a certificate of airworthiness that meets the requirements of Article 31 of the Convention has been issued for the aircraft; and
(amended 2002/03/01)

(b) in the case of an aircraft registered in another contracting state, the Minister has authorized its operation under Part II and, where a Canadian type certificate has not been issued for the aircraft type, the aircraft has been approved for operation under Part V.

(2) No air operator that is a citizen, permanent resident or corporation of a foreign state shall operate an aircraft in a commercial air service in Canada unless

(a) the aircraft is registered in Canada under Part II or in the foreign state; and

(b) where a Canadian type certificate has not been issued for the aircraft type, the aircraft has been approved for operation under Part V.

(3) The Minister may authorize the operation of an aircraft in aerial work under Subpart 2 if
(amended 2002/03/01)

(a) a special certificate of airworthiness in the restricted or limited classification has been issued in respect of the aircraft; or

(b) a foreign flight authority that is the equivalent of a special certificate of airworthiness in the restricted or limited classification has been issued in respect of the aircraft and validated by the Minister under section 507.05.

Extended Charter

700.06 No air operator shall operate an aircraft on an extended charter unless the air operator

(a) is authorized to do so in its air operator certificate; and

(b) complies with the *Commercial Air Service Standards*.

Management Agreement

700.07 No air operator shall manage another air operator's operation unless the air operator that manages the operation

(a) is authorized to do so in its air operator certificate; and

(b) complies with the *Commercial Air Service Standards*.

Operations between Points Abroad

700.08 No air operator shall operate an air service between points abroad unless the air operator

- (a) is authorized to do so in its air operator certificate; and
- (b) complies with the *Commercial Air Service Standards*.

Duties of Certificate Holder

(amended 2005/05/31)

700.09 (1) The holder of an air operator certificate issued under section 702.07, 703.07, 704.07 or 705.07 shall
(amended 2005/05/31)

- (a) appoint an operations manager and, where the holder does not hold an approved maintenance organization (AMO) certificate, a maintenance manager; and
 - (b) ensure that the operations manager meets the requirements of
 - (i) section 722.07 of Standard 722 — *Aerial Work* of the *Commercial Air Service Standards*,
 - (ii) section 723.07 of Standard 723 — *Air Taxi — Aeroplanes* of the *Commercial Air Service Standards*,
 - (iii) section 723.07 of Standard 723 — *Air Taxi — Helicopters* of the *Commercial Air Service Standards*,
 - (iv) section 724.07 of Standard 724 — *Commuter Operations — Aeroplanes* of the *Commercial Air Service Standards*,
 - (v) section 724.07 of Standard 724 — *Commuter Operations — Helicopters* of the *Commercial Air Service Standards*, or
 - (vi) section 725.07 of Standard 725 — *Airline Operations — Aeroplanes* of the *Commercial Air Service Standards*;
 - (c) ensure that the maintenance manager meets the requirements of section 726.03 of Standard 726 — *Air Operator Maintenance* of the *Commercial Air Service Standards*;
 - (d) in the case of the holder of an air operator certificate issued under section 705.07, ensure that the operations manager performs the duties set out in subsections 705.03(1) and (2);
 - (e) in the case of the holder of an air operator certificate issued under section 705.07 who is also the holder of an approved maintenance organization (AMO) certificate issued under section 573.02, ensure that the person responsible for maintenance performs the duties set out in section 705.04;
- (amended 2005/11/21)

(f) provide the operations manager and the maintenance manager with the financial and human resources necessary to ensure that the holder of the air operator certificate meets the requirements of these Regulations;

(g) authorize the maintenance manager to remove aircraft from operation, where the removal is justified because of non-compliance with the requirements of these Regulations or because of a risk to aviation safety or the safety of the public;

(h) ensure that corrective actions are taken in respect of any findings resulting from a quality assurance program established under section 706.07 or a safety management system referred to in section 705.151; and

(i) conduct reviews of the safety management system to determine its effectiveness.

(2) The maintenance manager appointed under paragraph (1)(a) shall be the person responsible for the maintenance control system of the air operator appointed under paragraph 706.03(1)(a).

(3) The holder of an air operator certificate issued under section 705.07 shall ensure that the person managing the safety management system referred to in section 705.153 performs the duties set out in that section.

DIVISION II — APPROACH BANS

(amended 2006/12/01)

Approach Bans — Non Precision, APV and CAT I Precision

(amended 2006/12/01)

700.10 (1) For the purposes of subsection (3), the visibility with respect to an aeroplane is less than the minimum visibility required for a non-precision approach, an APV or a CAT I precision approach if, in respect of the advisory visibility specified in the *Canada Air Pilot* and set out in column I of an item in the table to this section,
(amended 2006/12/01)

(a) where the RVR is measured by RVR “A” and RVR “B”, the RVR measured by RVR “A” for the runway of intended approach is less than the visibility set out in column II of the item for the approach conducted;

(b) where the RVR is measured by only one of RVR “A” and RVR “B”, the RVR for the runway of intended approach is less than the visibility set out in column II of the item for the approach conducted;

(c) where no RVR for the runway of intended approach is available, the runway visibility is less than the visibility set out in column II of the item for the approach conducted; or

(d) where the aerodrome is located south of the 60th parallel of north latitude and no RVR or runway visibility for the runway of intended approach is available, the ground visibility at the aerodrome where the runway is located is less than the visibility set out in column II of the item for the approach conducted.

(2) For the purposes of subsection (3), the visibility with respect to a helicopter is less than the minimum visibility required for a non-precision approach, an APV or a CAT I precision approach if
(amended 2006/12/01)

(a) where the RVR is measured by RVR "A" and RVR "B", the RVR measured by RVR "A" for the surface of intended approach is less than 1,200 feet; or

(b) where the RVR is measured by only one of RVR "A" and RVR "B", the RVR for the surface of intended approach is less than 1,200 feet.

(3) Where the visibility is less than the minimum visibility set out in subsection (1) or (2), as applicable, no person shall continue a non-precision approach, an APV or a CAT I precision approach in an IFR aircraft unless
(amended 2006/12/01)

(a) at the time a visibility report is received, the aircraft has passed the FAF inbound or, where there is no FAF, the point where the final approach course is intercepted;

(b) the aircraft is on a training flight where a landing is not intended and the appropriate air traffic control unit is informed that a missed approach procedure will be initiated at or above the decision height or minimum descent altitude, as appropriate;

(c) the RVR is varying between distances less than and greater than the minimum RVR;

(d) where the aerodrome is located south of the 60th parallel of north latitude and no RVR or runway visibility for the runway of intended approach is available, the ground visibility at the aerodrome where the runway is located is reported to vary between distances less than and greater than the minimum visibility;

(e) a localized meteorological phenomenon is affecting the ground visibility to the extent that the visibility on the approach to the runway of intended approach and along that runway, as observed by the pilot-in-command in flight and reported immediately to ATS, if available, is equal to or greater than the advisory visibility specified in the *Canada Air Pilot* in respect of the runway of intended approach for the instrument approach procedure conducted; or

(f) the approach is conducted in accordance with section 703.41, 704.37 or 705.48.

(4) No pilot-in-command of an IFR aircraft operated under this Part shall commence a non-precision approach, an APV or a CAT I precision approach to an airport where low-visibility procedures are in effect.
(amended 2006/12/01)

TABLE
APPROACH BANS — VISIBILITY

Item	Column I <i>Canada Air Pilot</i> Advisory Visibility		Column II Visibility Report	
	Statute miles	RVR in feet	Statute miles	Feet
1.	1/2	2 600	3/8	1 600
2.	3/4	4 000	5/8	3 000
3.	1	5 000	3/4	4 000
4.	1 1/4		1	5 000
5.	1 1/2		1 1/4	6 000
6.	1 3/4		1 1/2	greater than 6 000
7.	2		1 1/2	greater than 6 000
8.	2 1/4		1 3/4	greater than 6 000
9.	2 1/2		2	greater than 6 000
10.	2 3/4		2 1/4	greater than 6 000
11.	3		2 1/4	greater than 6 000

Approach Bans — CAT II and CAT III Precision
(amended 2006/12/01)

700.11 No pilot-in-command of an IFR aircraft operated under this Part who is conducting a CAT II or CAT III precision approach shall continue the approach beyond the FAF inbound or, where there is no FAF, the point where the final approach course is intercepted, unless the RVR is equal to or greater than the minimum RVR specified in the *Canada Air Pilot* in respect of the runway or surface of intended approach for the instrument approach procedure conducted.

(amended 2006/12/01)

700.12 and 700.13 Reserved
(amended 2006/12/01)

**DIVISION III — FLIGHT TIME AND FLIGHT
DUTY TIME LIMITATIONS AND REST PERIODS**
(amended 2006/12/01)

Monitoring System

700.14 (1) Every air operator shall establish a system that monitors the flight time, flight duty time and rest periods of each of its flight crew members and shall include in its company operations manual the details of that system.

(2) Where a person becomes aware that an assignment by an air operator to act as a flight crew member on a flight would result in the maximum flight time referred to in Section 700.15 or the maximum flight duty time referred to in Section 700.16 being exceeded, the person shall so notify the air operator.

Flight Time Limitations

700.15 (1) Subject to subsection (2), no air operator shall assign a flight crew member for flight time, and no flight crew member shall accept such an assignment, if the flight crew member's total flight time in all flights conducted by the flight crew member will, as a result, exceed

- (a) 1,200 hours in any 365 consecutive days;
- (b) 300 hours in any 90 consecutive days;
- (c) 120 hours in any 30 consecutive days or, in the case of a flight crew member on call, 100 hours in any 30 consecutive days;
- (d) where the flight is conducted under Subpart 4 or 5 using an aircraft other than a helicopter, 40 hours in any 7 consecutive days;
- (e) where the flight is conducted under Subpart 2 or 3, or is conducted using a helicopter, 60 hours in any 7 consecutive days; or
- (f) where the flight crew member conducts single-pilot IFR flights, 8 hours in any 24 consecutive hours.

(2) An air operator may assign a flight crew member for flight time, and a flight crew member may accept such an assignment, where the flight crew member's flight time will, as a result, exceed the flight time referred to in subsection (1) if

- (a) the increase in flight time is authorized in the air operator's air operator certificate; and
- (b) the air operator and the flight crew member comply with the *Commercial Air Service Standards*.

(3) Subject to Section 700.17, a flight crew member who reaches a flight time limitation established by this Section is deemed to be fatigued and shall not continue on flight duty or be reassigned to flight duty until such time as the flight crew member has had the rest period required by Section 700.16 or 700.19.

Flight Duty Time Limitations and Rest Periods

700.16 (1) Subject to subsections (5) and (7), no air operator shall assign a flight crew member for flight duty time, and no flight crew member shall accept such an assignment, if the flight crew member's flight duty time will, as a result, exceed 14 consecutive hours in any 24 consecutive hours. Where the flight is conducted under Subpart 4 or 5 using an aircraft other than a helicopter, flight duty time shall include 15 minutes for post-flight duties.

(2) Where the flight is conducted under Subpart 4 or 5 using an aircraft other than a helicopter or a DeHavilland DHC-6 aircraft pursuant to the *Commercial Air Service Standards*, a flight crew member shall receive at least 24 consecutive hours free from flight duty following 3 consecutive flight duty time assignments that exceed 12 consecutive hours

unless the flight crew member has received at least 24 consecutive hours free from flight duty between each flight duty time assignment.

(3) Following a flight duty time assignment, an air operator shall provide a flight crew member with the minimum rest period and any additional rest period required by this Part.

(4) A flight crew member shall use a rest period provided pursuant to subsection (3) and Section 700.19 to obtain the necessary rest and shall be adequately rested prior to reporting for flight duty.

(5) Where flight duty time includes a rest period, flight duty time may be extended beyond the maximum flight duty time referred to in subsection (1) by one-half the length of the rest period referred to in paragraph (b), to a maximum of 3 hours, if

(a) the air operator provides the flight crew member with advance notice of the extension of flight duty time;

(b) the air operator provides the flight crew member with a rest period of at least 4 consecutive hours in suitable accommodation; and

(c) the flight crew member's rest is not interrupted by the air operator during the rest period.

(6) The minimum rest period following flight duty time referred to in subsection (5) and prior to the next flight duty time shall be increased by an amount at least equal to the extension to the flight duty time.

(7) An air operator may assign a flight crew member for flight duty time, and a flight crew member may accept such an assignment, where the flight crew member's flight duty time will, as a result, exceed the flight duty time referred to in subsection (1) if

(a) the increase in flight duty time is authorized in the air operator certificate; and

(b) the air operator and the flight crew member comply with the *Commercial Air Service Standards*.

Unforeseen Operational Circumstances

700.17 The maximum flight time referred to in paragraphs 700.15(1)(a) to (e) and the maximum flight duty time referred to in subsection 700.16(1) may be exceeded if
(amended 1999/06/01)

(a) the flight is extended as a result of unforeseen operational circumstances;

(b) the pilot-in-command, after consultation with the other flight crew members, considers it safe to exceed the maximum flight time and flight duty time; and
(amended 1999/06/01)

(c) the air operator and the pilot-in-command comply with the *Commercial Air Service Standards*.

Delayed Reporting Time

700.18 Where a flight crew member is notified of a delay in reporting time before leaving a rest facility and the delay is in excess of 3 hours, the flight crew member's flight duty time is considered to have started 3 hours after the original reporting time.

Requirements for Time Free from Duty

700.19 (1) Subject to subsection (2), an air operator shall provide each flight crew member with the following time free from duty:

- (a) where the operation is conducted under Subpart 4 or 5 using an aircraft other than a helicopter, one period of at least 36 consecutive hours within each 7 consecutive days or one period of at least 3 consecutive calendar days within each 17 consecutive days;
- (b) where the operation is conducted under Subpart 2 or 3 or is conducted using a helicopter, one period of at least 24 consecutive hours 13 times within each 90 consecutive days and 3 times within each 30 consecutive days; and
- (c) where the flight crew member is a flight crew member on call, one period of at least 36 consecutive hours within each 7 consecutive days or one period of at least 3 consecutive calendar days within each 17 consecutive days.

(2) An air operator may provide a flight crew member with time free from duty other than as required by paragraphs (1)(a) and (b) if

- (a) the time free from duty is authorized in the air operator certificate; and
- (b) the air operator and the flight crew member comply with the *Commercial Air Service Standards*.

(3) An air operator shall notify a flight crew member on call of the commencement and duration of the flight crew member's time free from duty.

Flight Crew Positioning

700.20 Where a flight crew member is required by an air operator to travel for the purpose of positioning after the completion of flight duty time, the air operator shall provide the flight crew member with an additional rest period at least equal to one-half the time spent travelling that is in excess of the flight crew member's maximum flight duty time.

Flight Crew Members on Reserve

700.21 (1) An air operator shall provide flight crew members on reserve, within each 24-hour period, with a rest period that meets the requirements of the *Commercial Air Service Standards*.

(amended 1999/06/01)

(2) Every air operator shall outline in its company operations manual a method for ensuring compliance with this Section and the *Commercial Air Service Standards*.

Long-Range Flights

700.22 (1) A flight or series of flights that terminates more than 4 one-hour time zones from the point of departure, other than flights conducted entirely within Northern Domestic Airspace, shall be limited to 3 sectors and shall be followed by a rest period that is at least equal to the length of the preceding flight duty time.

(2) Where a flight referred to in subsection (1) is a transoceanic flight, the maximum number of sectors that may be completed after the transoceanic sector is one, excluding one unscheduled technical stop.

Controlled Rest on the Flight Deck

700.23 An air operator may institute a program of controlled rest on the flight deck if

- (a) The program is authorized in its air operator certificate; and
- (b) The air operator and the flight crew members comply with the *Commercial Air Service Standards*.



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CANADIAN AVIATION REGULATIONS

PART VII - COMMERCIAL AIR SERVICES

SUBPART 1 - FOREIGN AIR OPERATIONS

(701)

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PART VII - COMMERCIAL AIR SERVICES

SUBPART 1 - FOREIGN AIR OPERATIONS

DIVISION I - GENERAL

Application

701.01 This Subpart applies in respect of the operation in Canada of a foreign state aircraft or an aircraft operated by a foreign operator in an air transport service.

Requirement for Canadian Foreign Air Operator Certificate

701.02 (1) Subject to subsections (2) and (3), no person shall operate an aircraft in Canada unless the person complies with the conditions in a Canadian foreign air operator certificate issued to that person by the Minister pursuant to section 701.07.

(2) A person is not required to hold a Canadian foreign air operator certificate in order to conduct an overflight of Canada or to perform a technical landing in Canada unless the person operates the aircraft under section 701.19, 701.20 or 701.21.

(3) A person is not required to hold a Canadian foreign air operator certificate in order to operate a foreign state aircraft in Canada.

Requirements for Flight Authorization

701.03 (1) No person, other than the holder of a Canadian foreign air operator certificate, shall conduct an overflight of Canada or perform a technical landing in Canada unless the person is authorized to do so in a flight authorization issued by the Minister pursuant to section 701.10.

(2) No person shall operate a foreign state aircraft in Canada unless the person is authorized to do so in a flight authorization issued by the Minister pursuant to section 701.10.

701.04 to 701.06 Reserved

DIVISION II - CERTIFICATION AND AUTHORIZATION

Issuance or Amendment of Canadian Foreign Air Operator Certificate

701.07 Subject to section 6.71 of the Act, the Minister shall, on receipt of an application submitted in the form and manner required by the *Commercial Air Service Standards*, issue or amend a Canadian foreign air operator certificate.

***Contents of Canadian Foreign Air Operator
Certificate***

701.08 A Canadian foreign air operator certificate shall contain

- (a) the legal name, trade name and address of the foreign air operator;
- (b) the number of the foreign air operator certificate;
- (c) the effective date of certification;
- (d) the date of issue of the certificate;
- (e) the general conditions identified in section 701.09;
- (f) specific conditions with respect to
 - (i) the areas of operation authorized,
 - (ii) the types of service authorized,
 - (iii) the types of aircraft authorized, the conditions of operation and, if applicable, their registration, and
 - (iv) the base of operations and the designated points in Canada, if applicable; and
- (g) where the foreign air operator complies with the *Commercial Air Service Standards*, operations specifications with respect to
 - (i) instrument approach procedures,
 - (ii) special weather minima authorizations,
 - (iii) navigation system authorizations,
 - (iv) authorizations concerning flight crew member complement,
 - (v) special helicopter procedures, and
 - (vi) any other condition pertaining to the operation that the Minister deems necessary for aviation safety.

***General Conditions of Canadian Foreign Air
Operator Certificate***

701.09 A Canadian foreign air operator certificate shall contain the following general conditions:

- (a) the foreign air operator shall have a valid air operator certificate or equivalent document issued by the state of the foreign air operator;
- (b) the foreign air operator shall make no change in its air transport service in Canada, except in the case of an emergency, without notifying the Minister;
- (c) the foreign air operator shall notify the Minister within 10 working days after any change in its legal name or trade name;

- (d) the foreign air operator shall conduct flight operations in accordance with the ICAO standards;
- (e) the foreign air operator shall maintain its aircraft in accordance with the ICAO standards;
- (f) the foreign air operator shall comply with the applicable provisions of these Regulations; and
- (g) the foreign air operator shall conduct a safe operation.

Issuance of Flight Authorization

701.10 Subject to section 6.71 of the Act, the Minister shall, on receipt of an application submitted in the form and manner required by the *Commercial Air Service Standards*, issue a flight authorization

- (a) to conduct an overflight of Canada or to perform a technical landing in Canada; or
- (b) to operate a foreign state aircraft in Canada.

Contents of Flight Authorization

701.11 A flight authorization shall contain

- (a) the name of the holder of the flight authorization or of the person responsible for the flight;
- (b) the type of aircraft, the registration mark and, if applicable, the serial number;
- (c) the routing;
- (d) the date and time of arrival at, and departure from, the airports concerned;
- (e) the places of embarkation or disembarkation of passengers or freight;
- (f) an authorization for the transportation of dangerous goods or agricultural products, if applicable;
- (g) in the case of a foreign state aircraft, an authorization to conduct flight operations referred to in section 701.19, 701.20 or 701.21;
- (h) a requirement to conduct all operations in accordance with the applicable provisions of these Regulations; and
- (i) any condition pertaining to the operation that the Minister deems necessary for aviation safety.

701.12 to 701.15 Reserved

DIVISION III - FLIGHT OPERATIONS

Extended Range Twin-engined Operations

701.16 (1) Subject to subsection (2), no foreign air operator shall commence a flight in Canada in a twin-engined aeroplane certified for more than 20 passenger seats that is intended to be operated on a route containing a point that is farther from an adequate aerodrome than the distance that can be flown in 60 minutes at the one-engine-inoperative cruise speed, unless the flight is conducted wholly within Canadian Domestic Airspace.

(2) A foreign air operator may commence a flight referred to in subsection (1) where

(a) the aeroplane is turbine-powered;

(b) the foreign air operator holds a valid authorization or equivalent document issued by the state of the foreign air operator for extended range twin-engined operations; and

(c) the foreign air operator is authorized to do so in its Canadian foreign air operator certificate.

Canadian Minimum Navigation Performance Specifications (CMNPS) or North Atlantic Minimum Navigation Performance Specifications (NAT-MNPS) Airspace

701.17 (1) Subject to subsection (2), no foreign air operator shall commence a flight in Canada in an aircraft that is intended to be operated in airspace designated as CMNPS or NAT-MNPS unless

(a) the aircraft has been certified by the state of registry as meeting the minimum navigation performance specifications contained in the *North Atlantic MNPS Airspace Operations Manual*;

(b) the foreign air operator holds a valid authorization or equivalent document issued by the state of the foreign air operator or the state of registry for flight operations in airspace designated as CMNPS or NAT-MNPS; and

(c) the foreign air operator is authorized to do so in its Canadian foreign air operator certificate.

(2) A foreign air operator may, in airspace designated as CMNPS, commence a flight in Canada in an aircraft that has not been certified in accordance with paragraph (1)(a) where the appropriate ATC unit indicates that the aircraft can be accommodated without penalizing CMNPS-certified aircraft.

Routes in Uncontrolled Airspace

701.18 No foreign air operator commencing a flight in Canada shall, in uncontrolled airspace, conduct an IFR flight or a night VFR flight on a route other than an air route unless the foreign air operator

- (a) is authorized to do so in its Canadian foreign air operator certificate; and
- (b) complies with the *Commercial Air Service Standards*.

No Alternate Aerodrome - IFR Flight

701.19 For the purposes of section 602.122, a person may conduct an IFR flight where an alternate aerodrome has not been designated in the IFR flight plan or in the IFR flight itinerary if

- (a) in the case of a foreign air operator, the foreign air operator is authorized to do so in its Canadian foreign air operator certificate and complies with the *Commercial Air Service Standards*; or
- (b) in the case of a person who operates a foreign state aircraft, the person is authorized to do so in a flight authorization and complies with the *Commercial Air Service Standards*.

Take-off Minima

701.20 For the purposes of section 602.126, a person may conduct a take-off in an aircraft where weather conditions are below the take-off minima specified in the *Canada Air Pilot* if

- (a) in the case of a foreign air operator, the foreign air operator is authorized to do so in its Canadian foreign air operator certificate and complies with the *Commercial Air Service Standards*; or
- (b) in the case of a person who operates a foreign state aircraft, the person is authorized to do so in a flight authorization and complies with the *Commercial Air Service Standards*.

Landing Minima

701.21 For the purposes of subsection 602.128(4), a person may conduct a CAT II or CAT III precision approach in an IFR aircraft if

- (a) in the case of a foreign air operator, the foreign air operator is authorized to do so in its Canadian foreign air operator certificate and holds a valid authorization or equivalent document issued by the state of the foreign air operator to conduct a CAT II or CAT III precision approach in Canada; or
- (b) in the case of a person who operates a foreign state aircraft, the person is authorized to do so in a flight authorization and complies with the *Commercial Air Service Standards*.

Transport of Passengers in Single-engined Aircraft

701.21 (1) Subject to subsection (2), no foreign air operator commencing a flight in Canada shall operate a single-engined aircraft with passengers on board in IFR flight or in night VFR flight.

(2) A foreign air operator may operate a single-engined aircraft with passengers on board in IFR flight or in night VFR flight if the foreign air operator

- (a) is authorized to do so by the state of the foreign air operator;
- (b) is authorized to do so in its Canadian foreign air operator certificate; and
- (c) complies with the *Commercial Air Service Standards*.

Admission to Flight Deck

701.23 (1) Where a Department of Transport air carrier inspector presents an official identity card to the pilot-in-command of an aircraft operated by a foreign air operator in Canada, the pilot-in-command shall give the inspector free and uninterrupted access to the flight deck of the aircraft.

(2) A foreign air operator and the pilot-in-command shall make available for the use of the air carrier inspector the observer seat most suitable to perform the inspector's duties, as determined by the inspector.

Seats for Cabin Safety Inspectors

701.24 A foreign air operator shall provide a cabin safety inspector who is performing an in-flight cabin inspection in Canada with a confirmed passenger seat in the passenger compartment.

Aircraft Icing Operations

701.25 (1) In this section, "critical surfaces" means the wings, control surfaces, rotors, propellers, horizontal stabilizers, vertical stabilizers or any other stabilizing surface of an aircraft and, in the case of an aircraft that has rear-mounted engines, includes the upper surface of its fuselage.

(2) No person shall conduct or attempt to conduct a take-off in an aircraft that has frost, ice or snow adhering to any of its critical surfaces.

(3) Notwithstanding subsection (2), a person may conduct a take-off in an aircraft that has frost caused by cold-soaked fuel adhering to the underside of its wings if the take-off is conducted in accordance with the aircraft manufacturer's instructions for take-off under those conditions.

(4) Where conditions are such that frost, ice or snow may reasonably be expected to adhere to an aircraft, no person shall conduct or attempt to conduct a take-off in the aircraft unless

(a) the aircraft has been inspected immediately prior to take-off to determine whether any frost, ice or snow is adhering to any of its critical surfaces; or

(b) the foreign air operator or the holder of the flight authorization has

(i) established, in accordance with ICAO Document No. 9640 entitled *Manual of Aircraft Ground De/Anti-icing Operations*, an aircraft ground icing operations program that has been approved by the state of the foreign air operator or of the holder of the flight authorization, or

(ii) submitted to the Minister an aircraft ground icing operations program that meets the *Commercial Air Service Standards*.

(5) The inspection referred to in paragraph (4)(a) shall be performed from outside the aircraft

(a) The inspection referred to in paragraph (4)(a) shall be performed by

(i) the pilot-in-command;

(ii) a flight crew member of the aircraft who is designated by the pilot-in-command; or

(iii) a person, other than a person referred to in paragraph (a) or (b), who is designated by the foreign air operator or the holder of the flight authorization.

(7) No person shall perform the inspection referred to in paragraph (4)(a) unless the person has received annual training concerning aircraft surface contamination in accordance with the *Commercial Air Service Standards*.

(8) Where, before commencing a take-off, a crew member of an aircraft observes that there is frost, ice or snow adhering to the wings of the aircraft, the crew member shall immediately report that observation to the pilot-in-command, and the pilot-in-command or a flight crew member designated by the pilot-in-command shall inspect the wings of the aircraft before take-off.

DIVISION IV - FLIGHT DECK SECURITY

(amended 2003/04/09)

Interpretation

701.26 In this Division, "payload capacity" means the maximum zero fuel weight of an aeroplane set out in the type certificate issued in respect of the aeroplane less
(amended 2003/04/09)

(a) the empty weight of the aeroplane;

(b) the equipment necessary for the operation of the aeroplane; and

(c) the operating load of the aeroplane, which includes the minimum flight crew.

Application

701.27 (1) All the provisions of this Division apply in respect of the operation by a foreign air operator, in Canadian airspace, of a transport category aircraft that is
(amended 2003/04/09)

(a) a passenger-carrying aeroplane in respect of which a type certificate has been issued authorizing the transport of 20 or more passengers; or

(b) an all-cargo aeroplane with a payload capacity of more than 3 405 kg (7,500 pounds) that was equipped with a flight deck door on June 21, 2002.

(2) Section 701.28 also applies in respect of the operation by a foreign air operator, in Canadian airspace, of a transport category aircraft that is
(amended 2003/04/09)

(a) a passenger-carrying aeroplane in respect of which a type certificate has been issued authorizing the transport of fewer than 20 passengers; or

(b) an all-cargo aeroplane with a payload capacity of 3 405 kg (7,500 pounds) or less that was equipped with a flight deck door on June 21, 2002.

Admission to Flight Deck

701.28 No person shall be admitted to the flight deck of an aeroplane other than
(amended 2003/04/09)

(a) a flight crew member;

(b) a crew member performing their duties;

(c) an inspector of the civil aviation authority of the state where the aeroplane is registered; or

(d) a person who has expertise related to the aeroplane, its equipment or its crew members and who is required to be in the flight deck to provide a service to the air operator.

Closing and Locking of Flight Deck Door

701.29 (1) Subject to subsection (2), the pilot-in-command of an aeroplane that is equipped with a lockable flight deck door and that is carrying passengers shall ensure that at all times from the moment the passenger entry doors are closed in preparation for departure until they are opened on arrival the flight deck door is closed and locked.
(amended 2003/04/09)

(2) Subsection (1) does not apply when crew members or persons authorized in accordance with subsection 701.28 are required to enter or leave the flight deck
(amended 2003/04/09)

(a) for the performance of their duties;

(b) for physiological needs; or

(c) for an overriding concern related to the safety of the flight.

Doors and Locks

701.30 (1) Subject to subsections (3) and (4), no foreign air operator shall operate a transport category aircraft, except for a newly manufactured aeroplane on a non-revenue flight and any aeroplane on an overflight, unless the transport category aircraft is equipped with (amended 2003/04/09)

(a) in the case of a passenger-carrying aeroplane,

(i) a door between the flight deck and the passenger compartment, and

(ii) if the aeroplane is equipped with a crew rest facility having an entry from the flight deck and a separate entry from the passenger compartment, a door between the crew rest facility and the passenger compartment; and

(b) in the case of an all-cargo aeroplane that was equipped with a flight deck door on June 21, 2002,

(i) a door between the flight deck and a compartment occupied by a person, and

(ii) if the aeroplane is equipped with a crew rest facility having an entry from the flight deck and a separate entry from a compartment occupied by a person, a door between the crew rest facility and the compartment.

(2) The doors required by subsection (1) shall be equipped with a locking device that can be unlocked only from inside the flight deck or the crew rest facility, as the case may be. (amended 2003/04/09)

(3) A key shall be readily available to each crew member for each door that separates a passenger compartment or a compartment occupied by a person from an emergency exit, with the exception of a door required by subsection (1). (amended 2003/04/09)

(4) No crew member, except a flight crew member, shall have a key to a door required by subsection (1) at any time from the moment the passenger entry doors are closed in preparation for departure until they are opened on arrival unless the locking device required by subsection (2) is installed and locked. (amended 2003/04/09)

(5) No foreign air operator shall operate an aeroplane that is required by subsection (1) to be equipped with a door unless each door meets the design requirements of section 525.795 of the *Airworthiness Manual* in effect on May 1, 2002. (amended 2003/04/09)

701.31 to 701.36 Reserved
(amended 2003/04/09)



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CANADIAN AVIATION REGULATIONS

PART VII - COMMERCIAL AIR SERVICES

SUBPART 2 - AERIAL WORK OPERATIONS

702

Canada

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NOTE

All amendments to the CARs will be indicated by the Coming into Force date, immediately following the amended text.

RECORD OF AMENDMENTS *

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2009-1	2009/05/28	2012/03/06	
2009-2	2009/12/01	2012/03/06	

* All persons making use of this consolidation are reminded that it is not an "official" copy. The original regulations and amendments thereto, as published in Part II of the *Canada Gazette*, should be consulted for the purpose of officially interpreting and applying the regulations.

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PART VII - COMMERCIAL AIR SERVICES

SUBPART 2 - AERIAL WORK OPERATIONS

DIVISION I - GENERAL

Application

702.01 (1) Subject to subsection (2), this Subpart applies in respect of the operation of an aeroplane or helicopter in aerial work involving

- (a) the carriage on board of persons other than flight crew members;
- (b) the carriage of helicopter Class B, C or D external loads;
- (c) the towing of objects; or
(amended 1999/06/01)
- (d) the dispersal of products.

(2) This Subpart does not apply in respect of the operation of an ultra-light aeroplane, or in respect of the operation of an aircraft in aerial work involving sightseeing operations.

Aircraft Operation

702.02 No air operator shall operate an aircraft under this Subpart unless the air operator complies with the conditions and operations specifications in an air operator certificate issued to that operator by the Minister pursuant to Section 702.07.

702.03 to 702.06 Reserved

DIVISION II - CERTIFICATION

Issuance or Amendment of Air Operator Certificate

702.07 (1) Subject to Section 6.71 of the Act, the Minister shall, on receipt of an application submitted in the form and manner required by the *Commercial Air Service Standards*, issue or amend an air operator certificate where the applicant demonstrates to the Minister the ability to

- (a) maintain an adequate organizational structure;
- (b) maintain an operational control system;
- (c) meet training program requirements;

- (d) comply with maintenance requirements;
 - (e) meet the *Commercial Air Service Standards* for the operation; and
 - (f) conduct the operation safely.
- (2) For the purposes of subsection (1), an applicant shall have
- (a) a management organization capable of exercising operational control;
 - (b) managerial personnel who meet the *Commercial Air Service Standards*, are employed on a full-time basis and perform the functions related to the following positions, namely,
 - (i) operations manager,
 - (ii) chief pilot, and
 - (iii) where the applicant does not hold an approved maintenance organization (AMO) certificate, maintenance manager;
 - (c) the ground handling services and equipment necessary to ensure the safe handling of its flights;
 - (d) aircraft that are properly equipped for and flight crew members who are qualified for the area of operation and the type of operation;
 - (e) an operational control system that meets the requirements of Section 702.12;
 - (f) a training program that meets the requirements of this Subpart;
 - (g) legal custody and control of at least one aircraft of each category of aircraft that is to be operated;
 - (h) a company operations manual that meets the requirements of Sections 702.81 and 702.82; and
 - (i) a maintenance control system approved pursuant to Subpart 6.

Contents of Air Operator Certificate

702.08 An air operator certificate shall contain

- (a) the legal name, trade name and address of the air operator;
- (b) the number of the air operator certificate;
- (c) the effective date of certification;
- (d) the date of issue of the certificate;
- (e) the general conditions identified in Section 702.09;

- (f) specific conditions with respect to
 - (i) the areas of operation authorized,
 - (ii) the types of service authorized,
 - (iii) the types of aircraft authorized and, if applicable, their registration, and any operational restrictions, and
 - (iv) the main base and, if applicable, sub-bases; and
- (g) where the air operator complies with the *Commercial Air Service Standards*, operations specifications with respect to
 - (i) aircraft performance, equipment and emergency equipment requirements,
 - (ii) instrument approach procedures,
 - (iii) operations over a built-up area or in an aerial work zone,
 - (iv) the carriage of persons other than flight crew members and persons whose presence on board an aircraft is essential during flight,
 - (v) special weather minima authorizations,
 - (vi) authorizations concerning flight crew member complement,
 - (vii) navigation system authorizations,
 - (viii) pilot training and pilot proficiency checks,
 - (ix) special helicopter procedures,
 - (x) the air operator maintenance control system approved pursuant to Subpart 6,
 - (xi) leasing arrangements, and
 - (xii) any other condition pertaining to the operation that the Minister deems necessary for aviation safety.

General Conditions of Air Operator Certificate

702.09 An air operator certificate shall contain the following general conditions:

- (a) the air operator shall conduct flight operations in accordance with its company operations manual;
- (b) the air operator shall maintain an adequate organizational structure;
- (c) the air operator shall employ managerial personnel who meet the *Commercial Air Service Standards*;
- (d) the air operator shall conduct training in accordance with its training program approved pursuant to this Subpart;

- (e) the air operator shall maintain aircraft that are properly equipped for the area of operation and the type of operation;
- (f) the air operator shall employ crew members who are qualified for the area of operation and the type of operation;
- (g) the air operator shall maintain its aircraft in accordance with the requirements of Subpart 6;
- (h) the air operator shall maintain operational support services and equipment that meet the *Commercial Air Service Standards*;
- (i) the air operator shall notify the Minister within 10 working days after
(amended 2009/05/28)
 - (i) changing its legal name, its trade name, its main base, a sub-base or its managerial personnel, or
(amended 2009/05/28)
 - (ii) ceasing to operate a type of aircraft authorized under this Subpart; and
(amended 2009/05/28)
- (j) the air operator shall conduct a safe operation.

702.10 Reserved

DIVISION III - FLIGHT OPERATIONS

Operating Instructions

702.11 (1) An air operator shall ensure that all operations personnel are properly instructed about their duties and about the relationship of their duties to the operation as a whole.

(2) The operations personnel of an air operator shall follow the procedures specified in the air operator's company operations manual in the performance of their duties.

Operational Control System

702.12 No air operator shall operate an aircraft unless the air operator has an operational control system that meets the *Commercial Air Service Standards* and is under the control of its operations manager.

Flight Authorization

702.13 No person shall commence a flight unless the flight has been authorized in accordance with the procedures specified in the air operator's company operations manual.

Operational Flight Plan

702.14 No air operator shall permit a person to commence a flight unless an operational flight plan that meets the *Commercial Air Service Standards* has been prepared in accordance with the procedures specified in the air operator's company operations manual.

Maintenance of Aircraft

702.15 No air operator shall permit a person to conduct a take-off in an aircraft that has not been maintained in accordance with the air operator's maintenance control system.

Carriage of Persons

702.16 No air operator shall allow a person who is not a flight crew member to be carried on board an aircraft unless
(amended 1999/06/01)

(a) the person's presence on board is essential during the flight;
(amended 1999/06/01)

(b) the air operator is authorized in its air operator certificate to permit parachute descents and the person is a parachutist; or
(amended 1999/06/01)

(c) the air operator
(amended 1999/06/01)

(i) is authorized in its air operator certificate to carry a person, and

(ii) complies with the *Commercial Air Service Standards*.

VFR Flight Minimum Flight Visibility - Uncontrolled Airspace

702.17(1) Where an aeroplane is operated in day VFR flight within uncontrolled airspace at less than 1,000 feet AGL, a person may, for the purposes of subparagraph 602.115(c)(i), operate the aeroplane when flight visibility is less than two miles if the person

(a) is authorized to do so in an air operator certificate; and

(b) complies with the *Commercial Air Service Standards*.

(2) Where a helicopter is operated in day VFR flight within uncontrolled airspace at less than 1,000 feet AGL, a person may, for the purposes of subparagraph 602.115(d)(i), operate the helicopter when flight visibility is less than one mile if the person

(a) is authorized to do so in an air operator certificate; and

(b) complies with the *Commercial Air Service Standards*.

Night, VFR OTT and IFR Operations

702.18 (1) Subject to subsection (2), no air operator shall operate an aircraft at night, in VFR OTT flight or in IFR flight

- (a) while towing;
- (b) while carrying a helicopter Class B, C or D external load;
- (c) while dispersing products; or
- (d) where the aircraft is a single-engined aircraft.

(2) An air operator may operate an aircraft at night, in VFR OTT flight or in IFR flight in any of the cases referred to in subsection (1), if the air operator

- (a) is authorized to do so in its air operator certificate; and
- (b) complies with the *Commercial Air Service Standards*.

(3) No air operator shall operate an aircraft at night with persons other than flight crew members on board unless

- (a) the pilot-in-command has an instrument rating;
- (b) the air operator is authorized in its air operator certificate to permit parachute descents and night VFR flight and
(amended 1999/06/01)
 - (i) the persons are parachutists,
 - (ii) the flight takes place within 10 nautical miles of the aerodrome of departure, and
 - (iii) the flight takes place at night; or
- (c) the air operator is authorized in its air operator certificate to carry persons, other than parachutists, and the air operator complies with the *Commercial Air Service Standards*.
(amended 1999/06/01)

Entering or Leaving a Helicopter in Flight

702.19 For the purposes of paragraph 602.25(2)(b), the pilot-in-command of a helicopter may permit a person to enter or leave the helicopter in flight

- (a) where
 - (i) the helicopter is operated at a low hover,
 - (ii) the person is able to enter directly from or alight directly onto the supporting surface,
 - (iii) the air operator is authorized to do so in its air operator certificate, and
 - (iv) the air operator complies with the *Commercial Air Service Standards*; or

(b) where

- (i) the helicopter is operated to enable hoisting or rappelling, and
- (ii) the air operator complies with Section 702.21.

Aircraft Operating over Water

702.20 No air operator shall, except when conducting a take-off or landing, operate a land aircraft over water, beyond a point where the land aircraft could reach shore in the event of an engine failure, unless the air operator

- (a) is authorized to do so in its air operator certificate; and
- (b) complies with the *Commercial Air Service Standards*.

Helicopter Class D External Loads

702.21 (1) Subject to subsection (2), no air operator shall operate a helicopter to carry a helicopter Class D external load unless

- (a) the helicopter is a multi-engined helicopter that meets the transport category engine-isolation requirements of Chapter 529 of the *Airworthiness Manual* and that is capable of hovering with one engine inoperative at the existing weight and altitude;
- (b) the air operator is authorized to do so in its air operator certificate; and
- (c) the air operator complies with the *Commercial Air Service Standards*.

(2) An air operator may operate a helicopter other than a helicopter described in paragraph (1)(a) to carry a helicopter Class D external load if the air operator

- (a) is authorized to do so in its air operator certificate; and
- (b) complies with the *Commercial Air Service Standards*.

Built-up Area and Aerial Work Zone

702.22 (1) For the purposes of subsection 602.13(1), a person may conduct a take-off, approach or landing in an aircraft within a built-up area of a city or town at a place other than an airport, heliport or a military aerodrome, if the person
(amended 2007/06/30)

- (a) has an authorization from the Minister or is authorized to do so in an air operator certificate; and
- (b) complies with the *Commercial Air Service Standards*.

(2) For the purposes of paragraph 602.15(2)(a), a person may operate an aircraft over a built-up area at altitudes and distances less than those specified in paragraph 602.14(2)(a), if the person

(a) has an authorization from the Minister or is authorized to do so in an air operator certificate; and

(b) complies with the *Commercial Air Service Standards*.

(3) For the purposes of subsection 602.16(2), a person may operate a helicopter that is carrying a helicopter Class B, C or D external load over a built-up area or in an aerial work zone, if the person

(a) has an authorization from the Minister or is authorized to do so in an air operator certificate; and

(b) complies with the *Commercial Air Service Standards*.

Briefing of Persons other than Flight Crew Members

702.23 The pilot-in-command shall ensure that persons, other than flight crew members, who are on board the aircraft are given a safety briefing that meets the *Commercial Air Service Standards*.

Operation of Aircraft in Icing Conditions (amended 2009/05/28)

702.24 When icing conditions are reported to exist or are forecast to be encountered along the route of flight, no person shall authorize a flight or its continuation or conduct a take-off or continue a flight in an aircraft, even if the pilot-in-command determines that the aircraft is adequately equipped to operate in icing conditions in accordance with paragraph 605.30(a), if, in the opinion of the pilot-in-command, the safety of the flight might be adversely affected.
(amended 2009/05/28)

702.25 to 702.31 Reserved
(amended 2009/05/28)

DIVISION IV - AIRCRAFT PERFORMANCE OPERATING LIMITATIONS

702.32 to 702.41 Reserved

DIVISION V - AIRCRAFT EQUIPMENT REQUIREMENTS

Night and IMC Flights

702.42 (1) No person shall operate an aircraft at night unless the aircraft is equipped with (amended 2009/05/28)

(a) at least one landing light; and
(amended 2009/05/28)

(b) if the aircraft is operated in icing conditions, a means of illumination or other means to detect the formation of ice.
(amended 2009/05/28)

(2) No person shall operate a multi-engined aircraft in IMC unless the aircraft is equipped with

(a) two generators or two alternators, each of which is driven by a separate engine or by a rotor drive train; and

(b) two independent sources of energy, at least one of which is not a battery, and each of which is able to drive all flight instruments requiring a source of energy and is installed so that the failure of one instrument or one source of energy will affect neither the energy supply to the remaining instruments nor the other source of energy.

Additional Equipment for Single-Pilot Operations

702.43 No air operator shall operate an aircraft on a single-pilot operation in IFR flight unless the aircraft is equipped with

(a) an auto-pilot that is capable of operating the aircraft controls to maintain flight and manoeuvre the aircraft about the lateral and longitudinal axes;

(b) a headset with a boom microphone or equivalent and a transmit button on the control column; and

(c) a chart holder that is equipped with a light and that is placed in an easily readable position.

Shoulder Harnesses

702.44 No air operator shall operate an aircraft unless the pilot seat and any seat beside the pilot seat are equipped with a safety belt that includes a shoulder harness.

External Load Equipment

702.45 No air operator shall operate an aircraft carrying an external load unless the attachment device is authorized in a supplemental type certificate or in an airworthiness approval relating to the operational configuration of the aircraft.

ACAS

(amended 2007/07/01)

702.46 (1) Subject to subsection (3), no air operator shall operate a turbine-powered aeroplane having an MCTOW greater than 15 000 kg (33,069 pounds) in RVSM airspace unless the aeroplane is equipped with an operative ACAS that
(amended 2007/07/01)

(a) meets the requirements of ~~CAN~~-TSO-C119b or a more recent version of it or other requirements that the Minister has accepted as providing a level of safety that is at least equivalent to the level that that ~~CAN~~-TSO provides; and
(amended 2009/12/01)

(b) is equipped with a Mode S transponder that meets the requirements of ~~CAN~~-TSO-C112 or a more recent version of it.
(amended 2009/12/01)

(2) Subject to subsection (3), no air operator shall operate a turbine-powered aeroplane having an MCTOW greater than 15 000 kg (33,069 pounds) in airspace outside RVSM airspace unless the aeroplane is equipped with an operative ACAS that
(amended 2007/07/01)

(a) meets the requirements of ~~CAN~~-TSO-C119a or a more recent version of it or other requirements that the Minister has accepted as providing a level of safety that is at least equivalent to the level that that ~~CAN~~-TSO provides; and
(amended 2009/12/01)

(b) is equipped with a Mode S transponder that meets the requirements of ~~CAN~~-TSO-C112 or a more recent version of it.
(amended 2009/12/01)

(3) The air operator may operate the aeroplane without its being equipped with an operative ACAS if
(amended 2007/07/01)

(a) where a minimum equipment list has not been approved by the Minister and subject to subsection 605.08(1), the operation takes place within the three days after the date of failure of the ACAS;

(b) it is necessary for the pilot-in-command to deactivate, in the interests of aviation safety, the ACAS or any of its modes and the pilot-in-command does so in accordance with the aircraft flight manual, aircraft operating manual, flight manual supplement or minimum equipment list; or

(c) the aeroplane is engaged in or configured for use in fire fighting, aerial spraying services or aerial surveying and operates only in low level airspace.



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CANADIAN AVIATION REGULATIONS

PART VII - COMMERCIAL AIR SERVICES

SUBPART 3 - AIR TAXI OPERATIONS



Canada

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* All persons making use of this consolidation are reminded that it is not an "official" copy. The original regulations and amendments thereto, as published in Part II of the *Canada Gazette*, should be consulted for the purpose of officially interpreting and applying the regulations.

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703 - AIR TAXI OPERATIONS

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PART VII - COMMERCIAL AIR SERVICES

SUBPART 3 — AIR TAXI OPERATIONS

DIVISION I - GENERAL

Application

703.01 This Subpart applies in respect of the operation by a Canadian air operator, in an air transport service or in aerial work involving sightseeing operations, of any of the following aircraft:

- (a) a single-engined aircraft;
- (b) a multi-engined aircraft, other than a turbo-jet-powered aeroplane, that has a MCTOW of 8 618 kg (19,000 pounds) or less and a seating configuration, excluding pilot seats, of nine or less;
- (b.1) a multi-engined helicopter certified for operation by one pilot and operated under VFR; and
(amended 2005/12/01)
- (c) any aircraft that is authorized by the Minister to be operated under this Subpart.

Aircraft Operation

703.02 No air operator shall operate an aircraft under this Subpart unless the air operator complies with the conditions and operations specifications in an air operator certificate issued to that operator by the Minister pursuant to section 703.07.

703.03 to 703.06 Reserved

DIVISION II - CERTIFICATION

Issuance or Amendment of Air Operator Certificate

703.07 (1) Subject to section 6.71 of the Act, the Minister shall, on receipt of an application submitted in the form and manner required by the *Commercial Air Service Standards*, issue or amend an air operator certificate where the applicant demonstrates to the Minister the ability to

- (a) maintain an adequate organizational structure;
- (b) maintain an operational control system;
- (c) meet training program requirements;
- (d) comply with maintenance requirements;

(e) meet the *Commercial Air Service Standards* for the operation; and

(f) conduct the operation safely.

(2) For the purposes of subsection (1), an applicant shall have

(a) a management organization capable of exercising operational control;

(b) managerial personnel who have been approved by the Minister in accordance with the *Commercial Air Service Standards*, are employed on a full-time basis and perform the functions related to the following positions, namely,

(i) operations manager,

(ii) chief pilot, and

(iii) where the applicant does not hold an approved maintenance organization (AMO) certificate, maintenance manager;

(c) operational support services and equipment that meet the *Commercial Air Service Standards*;

(d) aircraft that are properly equipped for and flight crew members who are qualified for the area of operation and the type of operation;

(e) an operational control system that meets the requirements of section 703.16;

(f) a training program that meets the requirements of this Subpart;

(g) legal custody and control of at least one aircraft of each category of aircraft that is to be operated;

(h) a company operations manual that meets the requirements of sections 703.104 and 703.105; and

(i) a maintenance control system approved pursuant to Subpart 6.

Contents of Air Operator Certificate

703.08 An air operator certificate shall contain

(a) the legal name, trade name and address of the air operator;

(b) the number of the air operator certificate;

(c) the effective date of certification;

(d) the date of issue of the certificate;

(e) the general conditions identified in section 703.09;

(f) specific conditions with respect to

- (i) the areas of operation authorized,
- (ii) the types of service authorized,
- (iii) the types of aircraft authorized and, if applicable, their registration, and any operational restrictions, and
- (iv) the main base, scheduled points and, if applicable, sub-bases; and
(amended 2009/05/28)

(g) where the air operator complies with the *Commercial Air Service Standards*, operations specifications with respect to

- (i) aircraft performance, equipment and emergency equipment requirements,
- (ii) instrument approach procedures,
- (iii) enroute aerodrome authorizations and limitations,
- (iv) special weather minima authorizations,
- (v) authorizations concerning flight crew member complement,
- (vi) pilot training and pilot proficiency checks,
- (vii) special helicopter procedures,
- (viii) the air operator maintenance control system approved pursuant to Subpart 6,
- (ix) leasing arrangements, and
- (x) any other condition pertaining to the operation that the Minister deems necessary for aviation safety.

General Conditions of Air Operator Certificate

703.09 An air operator certificate shall contain the following general conditions:

- (a) the air operator shall conduct flight operations in accordance with its company operations manual;
- (b) the air operator shall maintain an adequate organizational structure;
- (c) the air operator shall employ managerial personnel who meet the *Commercial Air Service Standards*;
- (d) the air operator shall conduct training in accordance with its training program approved pursuant to this Subpart;
- (e) the air operator shall maintain aircraft that are properly equipped for the area of operation and the type of operation;

(f) the air operator shall employ crew members who are qualified for the area of operation and the type of operation;

(g) the air operator shall maintain its aircraft in accordance with the requirements of Subpart 6;

(h) the air operator shall maintain operational support services and equipment that meet the *Commercial Air Service Standards*;

(i) the air operator shall notify the Minister within 10 working days after
(amended 2009/05/28)

(i) changing its legal name, its trade name, its main base, a sub-base, a scheduled point, or its managerial personnel, or
(amended 2009/05/28)

(ii) ceasing to operate a type of aircraft authorized under this Subpart; and
(amended 2009/05/28)

(j) the air operator shall conduct a safe operation.

703.10 to 703.13 Reserved

DIVISION III - FLIGHT OPERATIONS

Operating Instructions

703.14 (1) An air operator shall ensure that all operations personnel are properly instructed about their duties and about the relationship of their duties to the operation as a whole.

(2) The operations personnel of an air operator shall follow the procedures specified in the air operator's company operations manual in the performance of their duties.

Scheduled Air Service Requirements

703.15 (1) Subject to subsection (2), every air operator that operates a scheduled air service for the purpose of transporting persons shall operate the service between airports or heliports or between an airport or heliport and a military aerodrome.
(amended 2007/06/30)

(2) An air operator may operate a scheduled air service for the purpose of transporting persons between an airport and an aerodrome other than a military aerodrome or between two aerodromes if the air operator is authorized to do so in its air operator certificate.

Operational Control System

703.16 No air operator shall operate an aircraft unless the air operator has an operational control system that meets the *Commercial Air Service Standards* and is under the control of its operations manager.

Flight Authorization

703.17 No person shall commence a flight unless the flight has been authorized in accordance with the procedures specified in the air operator's company operations manual.

Operational Flight Plan

703.18 (1) No air operator shall permit a person to commence a flight unless an operational flight plan that meets the *Commercial Air Service Standards* has been prepared in accordance with the procedures specified in the air operator's company operations manual.

(2) The pilot-in-command of an aircraft shall ensure that a copy of the operational flight plan is left at a point of departure, in accordance with the procedures specified in the company operations manual.

(3) An air operator shall retain a copy of the operational flight plan, including any amendments to that plan, for the period specified in the company operations manual.

Maintenance of Aircraft

703.19 No air operator shall permit a person to conduct a take-off in an aircraft that has not been maintained in accordance with the air operator's maintenance control system.

Fuel Requirements

703.20 No air operator shall authorize a flight and no person shall commence a flight unless the aircraft carries sufficient fuel to meet the fuel requirements of Part VI and to allow the aircraft

- (a) in the case of an aeroplane operated in IFR flight,
 - (i) to descend at any point along the route to the lower of
 - (A) the single-engined service ceiling, or
 - (B) 10,000 feet,
 - (ii) to cruise at the altitude referred to in subparagraph (i) to a suitable aerodrome,
 - (iii) to conduct an approach and a missed approach, and
 - (iv) to hold for 30 minutes at an altitude of 1,500 feet above the elevation of the aerodrome selected in accordance with subparagraph (ii); and
- (b) in the case of a helicopter operated in night VFR flight, to fly to the destination aerodrome and then to fly for 30 minutes at normal cruising speed.

Admission to Pilot's Compartment

703.21 (1) Where a Department of Transport air carrier inspector presents an official identity card to the pilot-in-command of an aircraft, the pilot-in-command shall give the inspector free and uninterrupted access to the pilot's compartment of the aircraft.

(2) An air operator and the pilot-in-command shall make available for the use of the air carrier inspector the seat most suitable to perform the inspector's duties, as determined by the inspector.

Transport of Passengers in Single-Engined Aircraft

703.22 (1) Subject to subsection (2), no air operator shall operate a single-engined aircraft with passengers on board in IFR flight or in night VFR flight.

(2) An air operator may operate a single-engined aircraft with passengers on board in IFR flight or in night VFR flight if the air operator

- (a) is authorized to do so in its air operator certificate; and
- (b) complies with the *Commercial Air Service Standards*.

Aircraft Operating over Water

703.23 No air operator shall, except when conducting a take-off or landing, operate a land aircraft over water, beyond a point where the land aircraft could reach shore in the event of an engine failure, unless the air operator

- (a) is authorized to do so in its air operator certificate; and
- (b) complies with the *Commercial Air Service Standards*.

Number of Passengers in Single-Engined Aircraft

703.24 No air operator shall operate a single-engined aircraft with more than nine passengers on board unless

- (a) the aircraft is a transport category helicopter;
- (b) the air operator is authorized to do so in its air operator certificate; and
- (c) the air operator complies with the *Commercial Air Service Standards*.

Carriage of External Loads

703.25 Except where carriage of an external load has been authorized in a type certificate or supplemental type certificate, no air operator shall operate an aircraft to carry an external load with passengers on board.

Simulation of Emergency Situations

703.26 No person shall, where passengers are on board an aircraft, simulate emergency situations that could affect the flight characteristics of the aircraft.

VFR Flight Obstacle Clearance Requirements

703.27 Except when conducting a take-off or landing, no person shall operate an aircraft in VFR flight

(a) at night, at less than 1,000 feet above the highest obstacle located within a horizontal distance of three miles from the route to be flown; or

(b) where the aircraft is an aeroplane, during the day, at less than 300 feet AGL or at a horizontal distance of less than 300 feet from any obstacle.

VFR Flight Minimum Flight Visibility - Uncontrolled Airspace

703.28 (1) Where an aeroplane is operated in day VFR flight within uncontrolled airspace at less than 1,000 feet AGL, a person may, for the purposes of subparagraph 602.115(c)(i), operate the aeroplane when flight visibility is less than two miles if the person

(a) is authorized to do so in an air operator certificate; and

(b) complies with the *Commercial Air Service Standards*.

(2) Where a helicopter is operated in day VFR flight within uncontrolled airspace at less than 1,000 feet AGL, a person may, for the purposes of subparagraph 602.115(d)(i), operate the helicopter when flight visibility is less than one mile if the person

(a) is authorized to do so in an air operator certificate; and

(b) complies with the *Commercial Air Service Standards*.

VFR Flight Weather Conditions

703.29 No person shall commence a VFR flight unless current weather reports and forecasts, if obtainable, indicate that the weather conditions along the route to be flown and at the destination aerodrome will be such that the flight can be conducted in compliance with VFR.

Take-off Minima

703.30 (1) Subject to subsection (2), no person shall conduct a take-off in an aircraft in IMC where weather conditions are at or above the take-off minima, but below the landing minima, for the runway to be used unless

- (a) the take-off is authorized in an air operator certificate; and
- (b) the person complies with the *Commercial Air Service Standards*.

(2) A person may conduct a take-off in an aircraft in IMC where weather conditions are at or above the take-off minima, but below the landing minima, for the runway to be used, if the weather conditions are at or above the landing minima for another suitable runway at that aerodrome.

(3) For the purposes of section 602.126, a person may conduct a take-off in an aircraft in IMC where weather conditions are below the take-off minima specified in the instrument approach procedure, if the person

- (a) is authorized to do so in an air operator certificate; and
- (b) complies with the *Commercial Air Service Standards*.

(4) For the purposes of this section, the landing minima are the decision height or the minimum descent altitude and the visibility published for an approach.

No Alternate Aerodrome - IFR Flight

703.31 For the purposes of section 602.122, a person may conduct an IFR flight where an alternate aerodrome has not been designated in the IFR flight plan or in the IFR flight itinerary, if the person

- (a) is authorized to do so in an air operator certificate; and
- (b) complies with the *Commercial Air Service Standards*.

Enroute Limitations

703.32 No person shall operate a multi-engined aircraft with passengers on board in IFR flight or in night VFR flight if the weight of the aircraft is greater than the weight that will allow the aircraft to maintain, with any engine inoperative, the MOCA of the route to be flown.

VFR OTT Flight

703.33 No person shall operate an aircraft in VFR OTT flight unless the person

- (a) is authorized to do so in an air operator certificate; and
- (b) complies with the *Commercial Air Service Standards*.

Routes in Uncontrolled Airspace

703.34 No person shall, in uncontrolled airspace, conduct an IFR flight or a night VFR flight on a route other than an air route unless the air operator establishes the route in accordance with the *Commercial Air Service Standards*.

703.35 Reserved
(amended 2006/12/01)

Minimum Altitudes and Distances

703.36 For the purposes of sections 602.13 and 602.15, a person may conduct a take-off, approach or landing in a helicopter within a built-up area of a city or town, or operate a helicopter at altitudes and distances less than those specified in subsection 602.14(2), if the person

(a) has an authorization from the Minister or is authorized to do so in an air operator certificate; and

(b) complies with the *Commercial Air Service Standards*.

Weight and Balance Control

703.37 (1) No person shall operate an aircraft unless, during every phase of the flight, the load restrictions, weight and centre of gravity of the aircraft conform to the limitations specified in the aircraft flight manual.

(2) An air operator shall have a weight and balance system that meets the *Commercial Air Service Standards*.

(3) An air operator shall specify in its company operations manual its weight and balance system and instructions to employees regarding the preparation and accuracy of weight and balance forms.

Passenger and Cabin Safety Procedures

703.38 (1) An air operator shall establish procedures to ensure that

(a) passengers move to and from the aircraft and embark and disembark safely, in accordance with procedures that meet the *Commercial Air Service Standards* and that are specified in the air operator's company operations manual;

(b) all passengers are seated and secured in accordance with subsection 605.26(1); and

(c) seats located at emergency exits are not occupied by passengers whose presence in those seats could adversely affect the safety of passengers or crew members during an emergency evacuation.

(2) No air operator shall permit an aircraft with passengers on board to be fuelled unless the fuelling is carried out in accordance with procedures that meet the *Commercial Air Service Standards* and that are specified in the air operator's company operations manual.

(3) For the purposes of section 602.08, no air operator shall permit the use of a portable electronic device on board an aircraft unless the air operator has established procedures that

(a) meet the *Commercial Air Service Standards*; and

(b) are specified in the air operator's company operations manual.

Briefing of Passengers

703.39 (1) The pilot-in-command shall ensure that passengers are given a safety briefing in accordance with the *Commercial Air Service Standards*.

(2) If the safety briefing referred to in subsection (1) is insufficient for a passenger because of that passenger's physical, sensory or comprehension limitations, seat orientation or responsibility for another person on board the aircraft, the pilot-in-command shall ensure that the passenger is given an individual safety briefing that
(amended 2009/05/28)

(a) is appropriate to the passenger's needs; and

(b) meets the *Commercial Air Service Standards*.

(3) An air operator shall ensure that each passenger is provided, at the passenger's seat or by means of clearly visible placards, with the safety information required by the *Commercial Air Service Standards*.

(4) The pilot-in-command shall ensure that, in the event of an emergency and where time and circumstances permit, all passengers are given an emergency briefing in accordance with the *Commercial Air Service Standards*.

(5) The pilot-in-command shall ensure that each passenger who is seated next to an emergency exit is made aware of how to operate that exit.

Instrument Approach Procedures

(amended 2006/12/01)

703.40 No person shall terminate an instrument approach with a landing unless, immediately before landing, the pilot-in-command ascertains, by means of radiocommunication or visual inspection,
(amended 2006/12/01)

(a) the condition of the runway or surface of intended landing; and

(b) the wind direction and speed.

***Approach Bans — Non-Precision Approach, APV
and Cat I Precision***
(amended 2006/12/01)

703.41 (1) For the purposes of subsections (2) to (4), the visibility with respect to an aeroplane is less than the minimum visibility required for a non-precision approach, an APV or a CAT I precision approach if, in respect of the advisory visibility specified in the *Canada Air Pilot* and set out in column I of an item in the table to this section,
(amended 2006/12/01)

- (a) where the RVR is measured by RVR “A” and RVR “B”, the RVR measured by RVR “A” for the runway of intended approach is less than the visibility set out in column II of the item for the approach conducted;
- (b) where the RVR is measured by only one of RVR “A” and RVR “B”, the RVR for the runway of intended approach is less than the visibility set out in column II of the item for the approach conducted;
- (c) where no RVR for the runway of intended approach is available, the runway visibility is less than the visibility set out in column II of the item for the approach conducted; or
- (d) where the aerodrome is located south of the 60th parallel of north latitude and no RVR or runway visibility for the runway of intended approach is available, the ground visibility at the aerodrome where the runway is located is less than the visibility set out in column II of the item for the approach conducted.

(2) No person shall continue a non-precision approach or an APV unless
(amended 2006/12/01)

- (a) the air operator is authorized to do so in its air operator certificate;
- (b) the aeroplane has a minimum flight crew composed of a pilot-in-command and a second-in-command;
- (c) if the flight crew does not use pilot-monitored-approach procedures, the aeroplane is equipped with an autopilot capable of conducting a non-precision approach or an APV to 400 feet AGL or lower;
- (d) the instrument approach procedure is conducted to straight-in minima; and
- (e) a visibility report indicates that
 - (i) the visibility is equal to or greater than that set out in subsection (1),
 - (ii) the RVR is varying between distances less than and greater than the minimum RVR set out in subsection (1), or
 - (iii) the visibility is less than the minimum visibility set out in subsection (1) and, at the time the visibility report is received, the aeroplane has passed the FAF inbound or, where there is no FAF, the point where the final approach course is intercepted.

(3) No person shall continue an SCDA non-precision approach unless
(amended 2006/12/01)

- (a) the air operator is authorized to do so in its air operator certificate;
- (b) the aeroplane has a minimum flight crew composed of a pilot-in-command and a second-in-command;
- (c) if the flight crew does not use pilot-monitored-approach procedures, the aeroplane is equipped with an autopilot capable of conducting a non-precision approach to 400 feet AGL or lower;
- (d) the instrument approach procedure is conducted to straight-in minima with a final approach course that meets the requirements of section 723.41 of Standard 723 — *Air Taxi — Aeroplanes of the Commercial Air Service Standards*;
- (e) the final approach segment is conducted using a stabilized descent with a planned constant descent angle specified in section 723.41 of Standard 723 — *Air Taxi — Aeroplanes of the Commercial Air Service Standards*; and
- (f) a visibility report indicates that
 - (i) the visibility is equal to or greater than that set out in subsection (1),
 - (ii) the RVR is varying between distances less than and greater than the minimum RVR set out in subsection (1), or
 - (iii) the visibility is less than the minimum visibility set out in subsection (1) and, at the time the visibility report is received, the aeroplane has passed the FAF inbound or, where there is no FAF, the point where the final approach course is intercepted.

(4) No person shall continue a CAT I precision approach to a runway with centreline lighting unless
(amended 2006/12/01)

- (a) the air operator is authorized to do so in its air operator certificate;
- (b) the aeroplane has a minimum flight crew composed of a pilot-in-command and a second-in-command;
- (c) the aeroplane is equipped with
 - (i) a flight director and autopilot capable of conducting a coupled precision approach to 200 feet AGL or lower, or
 - (ii) if the flight crew uses pilot-monitored-approach procedures, a flight director capable of conducting a precision approach to 200 feet AGL or lower;
- (d) the runway is equipped with serviceable high-intensity approach lighting, high-intensity runway centreline lighting and high-intensity runway edge lighting; and

(e) a visibility report indicates that

- (i) the visibility is equal to or greater than that set out in subsection (1),
- (ii) the RVR is varying between distances less than and greater than the minimum RVR set out in subsection (1), or
- (iii) the visibility is less than the minimum visibility set out in subsection (1) and, at the time the visibility report is received, the aeroplane has passed the FAF inbound or, where there is no FAF, the point where the final approach course is intercepted.

TABLE
APPROACH BANS—VISIBILITY

Item	Column I <i>Canada Air Pilot</i> Advisory Visibility		Column II Visibility Report	
	Statute miles	RVR in feet	Statute miles	Feet
1.	1/2	2 600	1/4	1 200
2.	3/4	4 000	3/8	2 000
3.	1	5 000	1/2	2 600
4.	1 1/4		5/8	3 400
5.	1 1/2		3/4	4 000
6.	1 3/4		1	5 000
7.	2		1	5 000
8.	2 1/4		1 1/4	6 000
9.	2 1/2		1 1/4	greater than 6 000
10.	2 3/4		1 1/2	greater than 6 000
11.	3		1 1/2	greater than 6 000

Operation of Aircraft in Icing Conditions
(amended 2009/05/28)

703.42 When icing conditions are reported to exist or are forecast to be encountered along the route of flight, no person shall authorize a flight or its continuation or conduct a take-off or continue a flight in an aircraft, even if the pilot-in-command determines that the aircraft is adequately equipped to operate in icing conditions in accordance with paragraph 605.30(a), if, in the opinion of the pilot-in-command, the safety of the flight might be adversely affected.
(amended 2009/05/28)

703.43 to 703.51 Reserved
(amended 2009/05/28)

**DIVISION IV - AIRCRAFT PERFORMANCE
OPERATING LIMITATIONS**

703.52 to 703.63 Reserved

**DIVISION V - AIRCRAFT EQUIPMENT
REQUIREMENTS**

Night and IMC Flight
(amended 2009/05/28)

703.64 (1) No person shall operate a multi-engined aircraft with passengers on board in IMC unless the aircraft is equipped with

- (a) a power failure warning device or vacuum indicator to show the power available for gyroscopic instruments from each power source;
- (b) an alternate source of static pressure for the altimeter and the airspeed and vertical speed indicators;
- (c) two generators, each of which is driven by a separate engine or by a rotor drive train; and
- (d) two independent sources of energy, at least one of which is an engine-driven pump or generator, and each of which is able to drive all gyroscopic instruments and is installed so that the failure of one instrument or one source of energy will affect neither the energy supply to the remaining instruments nor the other source of energy.

(2) No person shall operate an aircraft at night unless the aircraft is equipped with
(amended 2009/05/28)

(a) at least one landing light; and
(amended 2009/05/28)

(b) if the aircraft is operated in icing conditions, a means of illumination or other means to detect the formation of ice.
(amended 2009/05/28)

***Airborne Thunderstorm Detection and Weather
Radar Equipment***

703.65 No person shall operate an aircraft with passengers on board in IMC when current weather reports or forecasts indicate that thunderstorms may reasonably be expected along the route to be flown, unless the aircraft is equipped with thunderstorm detection equipment or weather radar equipment.

Additional Equipment for Single-pilot Operations

703.66 No person shall operate an aircraft on a single-pilot operation in IMC unless the aircraft is equipped with

- (a) an auto-pilot that is capable of operating the aircraft controls to maintain flight and manoeuvre the aircraft about the lateral and longitudinal axes;
- (b) a headset with a boom microphone or equivalent and a transmit button on the control column; and
- (c) a chart holder that is placed in an easily readable position and a means of illumination for the chart holder.

Protective Breathing Equipment

703.67 (1) No air operator shall operate a pressurized aircraft unless protective breathing equipment with a 15-minute supply of breathing gas at a pressure-altitude of 8,000 feet is readily available at each flight crew member position.

(2) The protective breathing equipment referred to in subsection (1) may be used to meet the crew member oxygen requirements specified in section 605.31.

First Aid Oxygen

703.68 No air operator shall operate an aircraft with passengers on board above FL 250 unless the aircraft is equipped with oxygen dispensing units and an undiluted supply of first aid oxygen sufficient to provide at least one passenger with oxygen for at least one hour or the entire duration of the flight at a cabin pressure-altitude above 8,000 feet, after an emergency descent following cabin depressurization, whichever period is longer.

Shoulder Harnesses

703.69 No person shall operate an aircraft unless the pilot seat and any seat beside the pilot seat are equipped with a safety belt that includes a shoulder harness.

ACAS

(amended 2007/07/01)

703.70 (1) Subject to subsection (3), no air operator shall operate an aeroplane having an MCTOW greater than 5 700 kg (12,566 pounds) in RVSM airspace unless the aeroplane is equipped with an operative ACAS that
(amended 2007/07/01)

- (a) meets the requirements of CAN-TSO-C119b or a more recent version of it or other requirements that the Minister has accepted as providing a level of safety that is at least equivalent to the level that that CAN-TSO provides; and

(amended 2009/12/01)

(b) is equipped with a Mode S transponder that meets the requirements of ~~CAN~~-TSO-C112 or a more recent version of it.

(amended 2009/12/01)

(2) Subject to subsection (3), no air operator shall operate an aeroplane having an MCTOW greater than 5 700 kg (12,566 pounds) in airspace outside RVSM airspace unless the aeroplane is equipped with an operative ACAS that

(amended 2007/07/01)

(a) meets the requirements of ~~CAN~~-TSO-C118 or a more recent version of it or other requirements that the Minister has accepted as providing a level of safety that is at least equivalent to the level that that ~~CAN~~-TSO provides; or

(amended 2009/12/01)

(b) meets the requirements of ~~CAN~~-TSO-C119a or a more recent version of it or other requirements that the Minister has accepted as providing a level of safety that is at least equivalent to the level that that ~~CAN~~-TSO provides and is equipped with a Mode S transponder that meets the requirements of ~~CAN~~-TSO-C112 or a more recent version of it.

(amended 2009/12/01)

(3) The air operator may operate the aeroplane without its being equipped with an operative ACAS if

(amended 2007/07/01)

(a) where a minimum equipment list has not been approved by the Minister and subject to subsection 605.08(1), the operation takes place within the three days after the date of failure of the ACAS; or

(b) it is necessary for the pilot-in-command to deactivate, in the interests of aviation safety, the ACAS or any of its modes and the pilot-in-command does so in accordance with the aircraft flight manual, aircraft operating manual, flight manual supplement or minimum equipment list.

(4) This section does not apply in respect of aeroplanes manufactured on or before the day on which this section comes into force until two years after that day.

(amended 2007/07/01)

703.71 to 703.81 Reserved

(amended 2007/07/01)

DIVISION VI - EMERGENCY EQUIPMENT

Equipment Standards and Inspection

703.82 No air operator shall operate an aircraft unless the emergency equipment carried on board the aircraft pursuant to Division II of Subpart 2 of Part VI meets the *Commercial Air Service Standards* and is inspected regularly in accordance with the inspection schedule set out in the air operator's company operations manual.

703.83 to 703.85 Reserved

DIVISION VII - PERSONNEL REQUIREMENTS

Minimum Crew

703.86 No air operator shall operate an aircraft with passengers on board in IFR flight with fewer than two pilots unless the air operator

- (a) is authorized to do so in its air operator certificate; and
- (b) complies with the *Commercial Air Service Standards*.

Designation of Pilot-in-command and Second-in-command

703.87 An air operator shall designate for each flight a pilot-in-command and, where the crew includes two pilots, a pilot-in-command and a second-in-command.

Flight Crew Member Qualifications

703.88 (1) Subject to subsections (6) and (7), no air operator shall permit a person to act and no person shall act as a flight crew member in an aircraft unless the person (amended 2000/02/01)

- (a) holds the licence and ratings required by Part IV;
- (b) within the previous 90 days, has completed at least three take-offs and three landings
 - (i) where a type rating for that aircraft is required, in an aircraft of that type, or in a flight simulator representing that type of aircraft that has been approved by the Minister under Subpart 6 of Part VI for take-off and landing qualifications, or
 - (ii) where a type rating for that aircraft is not required, in an aircraft of that category and class, or in a flight simulator representing that category and class of aircraft that has been approved by the Minister under Subpart 6 of Part VI for take-off and landing qualifications;
- (c) has successfully completed a pilot proficiency check or competency check for that type of aircraft, the validity period of which has not expired, in accordance with the *Commercial Air Service Standards* as follows:
(amended 2000/02/01)
 - (i) in the case of the pilot-in-command of a multi-engined aircraft or of a single-engined aeroplane that is operated in accordance with subsection 703.22(2), a pilot proficiency check for that type of aircraft,
 - (ii) in the case of the pilot-in-command of a single-engined helicopter, a pilot proficiency check on one of the types of single-engined helicopters operated by the air operator,

(iii) in the case of the second-in-command of a multi-engined aircraft, a pilot proficiency check or a competency check for that type of aircraft, and

(iv) in the case of the pilot-in-command of a single-engined aeroplane that is not operated in accordance with subsection 703.22(2), a competency check for that type of aircraft; and

(amended 1999/06/01)

(d) has fulfilled the requirements of the air operator's ground and flight training program.

(2) An air operator may group similar aeroplanes as a single type for purposes of the pilot proficiency check referred to in paragraph (1)(c) if the air operator

(a) is authorized to do so in its air operator certificate; and

(b) complies with the *Commercial Air Service Standards*.

(3) No person shall act as the pilot-in-command of an aircraft with a person other than a flight crew member on board in night VFR flight unless the person acting as the pilot-in-command holds an instrument rating for that class of aircraft.

(4) No air operator shall permit a person to act and no person shall act as the pilot-in-command of an aircraft with passengers on board unless the person has acquired, prior to designation as pilot-in-command, the following flight time on that type and basic model of aircraft and in the pilot-in-command position:

(a) in the case of a single-engined aeroplane or a helicopter, five hours; or

(b) in the case of a multi-engined aeroplane, 15 hours.

(5) The flight time required by subsection (4) may be reduced by one hour for each take-off and landing completed, up to a maximum of 50 per cent.

(6) An air operator may permit a person to act and a person may act as a flight crew member in an aircraft if the person does not meet the requirements set out in paragraphs (1)(b) to (d), if the air operator

(amended 1999/06/01)

(a) is authorized to do so in its air operator certificate, and

(amended 1999/06/01)

(b) complies with the *Commercial Air Service Standards*.

(amended 1999/06/01)

(7) Subparagraph (1)(c)(iv) does not apply in the case of a chief pilot who acts as pilot-in-command of a single-engined aeroplane that is not operated in accordance with subsection 703.22(2).

(amended 2000/02/01)

Qualifications of Operational Control Personnel

703.89 (1) No air operator shall permit a person to act and no person shall act in an operational control position unless that person has fulfilled the training requirements set out in this Subpart and has demonstrated to the air operator the knowledge and abilities required by the *Commercial Air Service Standards*.

(2) A person who has not acted in an operational control position within the previous three months shall, prior to acting in an operational control position, satisfy the air operator that the person still has the knowledge and abilities referred to in subsection (1).

Check Authority

703.90 (1) A pilot proficiency check shall be conducted by the Minister.

(2) Any other check required under this Subpart may be conducted by the Minister.

Validity Period

703.91 (1) Subject to subsections (2) and (3), the validity period of a pilot proficiency check, a competency check and the annual training referred to in section 703.98 expires on the first day of the thirteenth month following the month in which the pilot proficiency check, competency check or training was completed.

(2) Where a pilot proficiency check, a competency check or annual training is renewed within the last 90 days of its validity period, its validity period is extended by 12 months.

(3) The Minister may extend the validity period of a pilot proficiency check, a competency check or annual training by up to 60 days where the Minister is of the opinion that aviation safety is not likely to be affected.

(4) Where the validity period of a pilot proficiency check, a competency check or annual training has been expired for 24 months or more, the person shall requalify by meeting the training requirements specified in the *Commercial Air Service Standards*.

703.92 to 703.97 Reserved

DIVISION VIII - TRAINING

Training Program

703.98 (1) Every air operator shall establish and maintain a ground and flight training program that is

(a) designed to ensure that each person who receives training acquires the competence to perform the person's assigned duties; and

(b) approved by the Minister in accordance with the *Commercial Air Service Standards*.

(2) An air operator's ground and flight training program shall include

- (a) company indoctrination training;
- (b) upgrading training;
- (c) initial and annual training, including
 - (i) aircraft type training,
 - (ii) aircraft servicing and ground handling training,
 - (iii) emergency procedures training,
 - (iv) training for operational control personnel, and
 - (v) aircraft surface contamination training for pilots and other operations personnel; and
- (d) any other training required to ensure a safe operation under this Subpart.

(3) An air operator shall

- (a) include a detailed syllabus of its ground and flight training program in its company operations manual;
- (b) ensure that qualified personnel are provided for its ground and flight training program, in accordance with the *Commercial Air Service Standards*; and
- (c) establish and maintain a safety awareness program concerning the adverse effects of aircraft surface contamination and provide the program to all flight operations personnel who are not required to receive the training described in subparagraph (2)(c)(v).

Training and Qualification Records

703.99 (1) Every air operator shall, for each person who is required to receive training under this Subpart, establish and maintain a record of

- (a) the person's name and, where applicable, personnel licence number, type and ratings;
- (b) if applicable, the person's medical category and the expiry date of that category;
- (c) the dates on which the person, while in the air operator's employ, successfully completed any training, pilot proficiency check, competency check or examination required under this Subpart or obtained any qualification required under this Subpart;
- (d) information relating to any failure of the person, while in the air operator's employ, to successfully complete any training, pilot proficiency check, competency check or examination required under this Subpart or to obtain any qualification required under this Subpart; and
- (e) the type of aircraft or flight training equipment used for any training, pilot proficiency check, competency check or qualification required under this Subpart.

(2) An air operator shall retain the records referred to in paragraphs (1)(c) and (d) and a record of each pilot proficiency check for at least three years.

(3) An air operator shall retain a copy of the most recent written examination completed by each pilot for each type of aircraft for which the pilot has a qualification.

703.100 to 703.103 Reserved

DIVISION IX - MANUALS

Requirements Relating to Company Operations Manual

703.104 (1) Every air operator shall establish and maintain a company operations manual that meets the requirements of section 703.105.

(2) An air operator shall submit its company operations manual, and any amendments to that manual, to the Minister.

(3) Where there is a change in any aspect of an air operator's operation or where the company operations manual no longer meets the *Commercial Air Service Standards*, the air operator shall amend its company operations manual.

(4) The Minister shall, where the *Commercial Air Service Standards* are met, approve those parts of a company operations manual, and any amendments to those parts, that relate to the information required by section 703.105.

Contents of Company Operations Manual

703.105 (1) A company operations manual, which may be issued in separate parts corresponding to specific aspects of an operation, shall include the instructions and information necessary to enable the personnel concerned to perform their duties safely and shall contain the information required by the *Commercial Air Service Standards*.

(2) A company operations manual shall be such that

(a) all parts of the manual are consistent and compatible in form and content;

(b) the manual can be readily amended;

(c) the manual contains an amendment control page and a list of the pages that are in effect; and

(d) the manual has the date of the last amendment to each page specified on that page.

Distribution of Company Operations Manual

703.106 (1) Subject to subsection (2), an air operator shall provide a copy of the appropriate parts of its company operations manual, including any amendments to those parts, to each of its crew members and to its ground operations and maintenance personnel.

(2) An air operator may place a copy of the appropriate parts of its company operations manual in each aircraft that it operates, instead of providing a copy to each crew member, if the air operator has established in its company operations manual procedures for amending that manual.

(3) Every person who has been provided with a copy of the appropriate parts of a company operations manual pursuant to subsection (1) shall keep it up to date with the amendments provided and shall ensure that the appropriate parts are accessible when the person is performing assigned duties.

Standard Operating Procedures

703.107 (1) Every air operator shall, for each of its aircraft that is required to be operated by two or more pilots, establish and maintain standard operating procedures that enable the crew members to operate the aircraft within the limitations specified in the aircraft flight manual and that meet the *Commercial Air Service Standards*.

(2) An air operator that has established standard operating procedures for an aircraft shall ensure that a copy of the standard operating procedures is carried on board the aircraft.

703.108 and 703.109 Reserved



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CANADIAN AVIATION REGULATIONS

PART VII - COMMERCIAL AIR SERVICES

(404)

SUBPART 4 - COMMUTER OPERATIONS

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* All persons making use of this consolidation are reminded that it is not an "official" copy. The original regulations and amendments thereto, as published in Part II of the *Canada Gazette*, should be consulted for the purpose of officially interpreting and applying the regulations.

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PART VII — COMMERCIAL AIR SERVICES

SUBPART 4 — COMMUTER OPERATIONS

DIVISION I - GENERAL

Application

704.01 This Subpart applies in respect of the operation by a Canadian air operator, in an air transport service or in aerial work involving sightseeing operations, of any of the following aircraft:

- (a) a multi-engined aeroplane that has a MCTOW of 8 618 kg (19,000 pounds) or less and a seating configuration, excluding pilot seats, of 10 to 19 inclusive;
(amended 2005/12/01)
- (b) a turbo-jet-powered aeroplane that has a maximum zero fuel weight of 22 680 kg (50,000 pounds) or less and for which a Canadian type certificate has been issued authorizing the transport of not more than 19 passengers;
- (b.1) a multi-engined helicopter with a seating configuration, excluding pilot seats, of 10 to 19 inclusive, unless it is certified for operation with one pilot and operated under VFR; and
(amended 2005/12/01)
- (c) any aircraft that is authorized by the Minister to be operated under this Subpart.

Aircraft Operation

704.02 No air operator shall operate an aircraft under this Subpart unless the air operator complies with the conditions and operations specifications in an air operator certificate issued to that operator by the Minister pursuant to section 704.07.

704.03 to 704.06 Reserved

DIVISION II - CERTIFICATION

Issuance or Amendment of Air Operator Certificate

704.07 (1) Subject to section 6.71 of the Act, the Minister shall, on receipt of an application submitted in the form and manner required by the *Commercial Air Service Standards*, issue or amend an air operator certificate where the applicant demonstrates to the Minister the ability to

- (a) maintain an adequate organizational structure;
- (b) maintain an operational control system;

- (c) meet training program requirements;
 - (d) comply with maintenance requirements;
 - (e) meet the *Commercial Air Service Standards* for the operation; and
 - (f) conduct the operation safely.
- (2) For the purposes of subsection (1), an applicant shall have
- (a) a management organization capable of exercising operational control;
 - (b) managerial personnel who have been approved by the Minister in accordance with the *Commercial Air Service Standards*, are employed on a full-time basis and perform the functions related to the following positions, namely,
 - (i) operations manager,
 - (ii) chief pilot, and
 - (iii) where the applicant does not hold an approved maintenance organization (AMO) certificate, maintenance manager;
 - (c) operational support services and equipment that meet the *Commercial Air Service Standards*;
 - (d) after January 1, 1997, where a master minimum equipment list has been established for a type of aircraft, a minimum equipment list for each aircraft of that type, approved by the Minister in accordance with the procedures specified in the *MMEL/MEL Policy and Procedures Manual*;
 - (e) aircraft that are properly equipped for and flight crew members who are qualified for the area of operation and the type of operation;
 - (f) an operational control system that meets the requirements of section 704.15;
 - (g) a training program that meets the requirements of this Subpart;
 - (h) legal custody and control of at least one aircraft of each category of aircraft that is to be operated;
 - (i) a company operations manual that meets the requirements of sections 704.120 and 704.121; and
 - (j) a maintenance control system approved pursuant to Subpart 6.

Contents of Air Operator Certificate

704.08 An air operator certificate shall contain

- (a) the legal name, trade name and address of the air operator;
- (b) the number of the air operator certificate;
- (c) the effective date of certification;
- (d) the date of issue of the certificate;
- (e) the general conditions identified in section 704.09;
- (f) specific conditions with respect to
 - (i) the areas of operation authorized,
 - (ii) the types of service authorized,
 - (iii) the types of aircraft authorized and, if applicable, their registration, and any operational restrictions, and
 - (iv) the ~~main~~ base, scheduled points and, if applicable, sub-bases; and
(amended 2009/05/28)
- (g) where the air operator complies with the *Commercial Air Service Standards*, operations specifications with respect to
 - (i) aircraft performance, equipment and emergency equipment requirements,
 - (ii) instrument approach procedures,
 - (iii) enroute aerodrome authorizations and limitations,
 - (iv) special weather minima authorizations,
 - (v) authorizations concerning flight crew member qualifications and flight crew member complement,
 - (vi) navigation system authorizations,
 - (vii) pilot training and pilot proficiency checks,
 - (viii) special helicopter procedures,
 - (ix) the air operator maintenance control system approved pursuant to Subpart 6,
 - (x) leasing arrangements, and
 - (xi) any other condition pertaining to the operation that the Minister deems necessary for aviation safety.

General Conditions of Air Operator Certificate

704.09 An air operator certificate shall contain the following general conditions:

- (a) the air operator shall conduct flight operations in accordance with its company operations manual;
- (b) the air operator shall maintain an adequate organizational structure;
- (c) the air operator shall employ managerial personnel who meet the *Commercial Air Service Standards*;
- (d) the air operator shall conduct training in accordance with its training program approved pursuant to this Subpart;
- (e) the air operator shall maintain aircraft that are properly equipped for the area of operation and the type of operation;
- (f) the air operator shall employ crew members who are qualified for the area of operation and the type of operation;
- (g) the air operator shall maintain its aircraft in accordance with the requirements of Subpart 6;
- (h) the air operator shall maintain operational support services and equipment that meet the *Commercial Air Service Standards*;
- (i) the air operator shall notify the Minister within 10 working days after

(amended 2009/05/28)

- (i) changing its legal name, its trade name, its main base, a sub-base, a scheduled point or its managerial personnel; or

(amended 2009/05/28)

- (ii) ceasing to operate a type of aircraft authorized under this Subpart; and

(amended 2009/05/28)

- (j) the air operator shall conduct a safe operation.

704.10 and 704.11 Reserved

DIVISION III - FLIGHT OPERATIONS*Operating Instructions*

704.12 (1) An air operator shall ensure that all operations personnel are properly instructed about their duties and about the relationship of their duties to the operation as a whole.

(2) The operations personnel of an air operator shall follow the procedures specified in the air operator's company operations manual in the performance of their duties.

General Operational Information

704.13 Every air operator shall establish a system for the timely dissemination of general operational information that includes a means for each crew member to acknowledge receipt of such information.

Scheduled Air Service Requirements

704.14 (1) Subject to subsection (2), every air operator that operates a scheduled air service for the purpose of transporting persons shall operate the service between airports **or heliports** or between an airport **or heliport** and a military aerodrome.
(amended 2007/06/30)

(2) An air operator may operate a scheduled air service for the purpose of transporting persons between an airport and an aerodrome other than a military aerodrome or between two aerodromes if the air operator is authorized to do so in its air operator certificate.

Operational Control System

704.15 No air operator shall operate an aircraft unless the air operator has an operational control system that meets the *Commercial Air Service Standards* and is under the control of its operations manager.

Flight Authorization

704.16 No person shall commence a flight unless the flight has been authorized in accordance with the procedures specified in the air operator's company operations manual.

Operational Flight Plan

704.17 (1) No air operator shall permit a person to commence a flight unless an operational flight plan that meets the *Commercial Air Service Standards* has been prepared in accordance with the procedures specified in the air operator's company operations manual.

(2) The pilot-in-command of an aircraft shall ensure that one copy of the operational flight plan is left at a point of departure, in accordance with the procedures specified in the company operations manual, and that another copy is carried on board the aircraft until the aircraft reaches the final destination of the flight.

(3) An air operator shall retain a copy of the operational flight plan, including any amendments to that plan, for the period specified in the company operations manual.

Maintenance of Aircraft

704.18 No air operator shall permit a person to conduct a take-off in an aircraft that has not been maintained in accordance with the air operator's maintenance control system.

Checklist

704.19 (1) Every air operator shall establish the checklist referred to in paragraph 602.60(1)(a) for each aircraft type that it operates and shall make the appropriate parts of the checklist readily available to the crew members.

(2) Every crew member shall follow the checklist referred to in subsection (1) in the performance of the crew member's assigned duties.

Fuel Requirements

704.20 No air operator shall authorize a flight and no person shall commence a flight unless the aircraft carries sufficient fuel to meet the fuel requirements of Part VI and to allow the aircraft

- (a) in the case of an aeroplane operated in IFR flight,
 - (i) to descend at any point along the route to the lower of
 - (A) the single-engined service ceiling, or
 - (B) 10,000 feet,
 - (ii) to cruise at the altitude referred to in subparagraph (i) to a suitable aerodrome,
 - (iii) to conduct an approach and a missed approach, and
 - (iv) to hold for 30 minutes at an altitude of 1,500 feet above the elevation of the aerodrome selected in accordance with subparagraph (ii); and
- (b) in the case of a helicopter operated in night VFR flight, to fly to the destination aerodrome and then to fly for 30 minutes at normal cruising speed.

Admission to Flight Deck

704.21 (1) Where a Department of Transport air carrier inspector presents an official identity card to the pilot-in-command of an aircraft, the pilot-in-command shall give the inspector free and uninterrupted access to the flight deck of the aircraft.

(2) An air operator and the pilot-in-command shall make available for the use of the air carrier inspector the seat most suitable to perform the inspector's duties, as determined by the inspector.

Simulation of Emergency Situations

704.22 No person shall, where passengers are on board an aircraft, simulate emergency situations that could affect the flight characteristics of the aircraft.

VFR Flight Obstacle Clearance Requirements

704.23 Except when conducting a take-off or landing, no person shall operate an aircraft in VFR flight

- (a) at night, at less than 1,000 feet above the highest obstacle located within a horizontal distance of three miles from the route to be flown; or

(b) where the aircraft is an aeroplane, during the day, at less than 500 feet AGL or at a horizontal distance of less than 500 feet from any obstacle.

***VFR Flight Minimum Flight Visibility -
Uncontrolled Airspace***

704.24 Where a helicopter is operated in day VFR flight within uncontrolled airspace at less than 1,000 feet AGL, a person may, for the purposes of subparagraph 602.115(d)(i), operate the helicopter when flight visibility is less than one mile if the person

- (a) is authorized to do so in an air operator certificate; and
- (b) complies with the *Commercial Air Service Standards*.

VFR Flight Weather Conditions

704.25 No person shall commence a VFR flight unless current weather reports and forecasts, if obtainable, indicate that the weather conditions along the route to be flown and at the destination aerodrome will be such that the flight can be conducted in compliance with VFR.

Take-off Minima

704.26 (1) Subject to subsection (2), no person shall conduct a take-off in an aircraft in IMC where weather conditions are at or above the take-off minima, but below the landing minima, for the runway to be used unless

- (a) the take-off is authorized in an air operator certificate; and
- (b) the person complies with the *Commercial Air Service Standards*.

(2) A person may conduct a take-off in an aircraft in IMC where weather conditions are at or above the take-off minima, but below the landing minima, for the runway to be used, if the weather conditions are at or above the landing minima for another suitable runway at that aerodrome, taking into account the aircraft performance operating limitations specified in Division IV.

(3) For the purposes of section 602.126, a person may conduct a take-off in an aircraft in IMC where weather conditions are below the take-off minima specified in the instrument approach procedure, if the person

- (a) is authorized to do so in an air operator certificate; and
- (b) complies with the *Commercial Air Service Standards*.

(4) For the purposes of this section, the landing minima are the decision height or the minimum descent altitude and the visibility published for an approach.

No Alternate Aerodrome — IFR Flight

704.27 For the purposes of section 602.122, a person may conduct an IFR flight where an alternate aerodrome has not been designated in the IFR flight plan or in the IFR flight itinerary, if the person

- (a) is authorized to do so in an air operator certificate; and
- (b) complies with the *Commercial Air Service Standards*.

VFR OTT Flight

704.28 No person shall operate an aircraft in VFR OTT flight unless

- (a) ~~Repealed 2007/06/30~~;
- (b) the person is authorized to do so in an air operator certificate; and
- (c) the person complies with the *Commercial Air Service Standards*.

Routes in Uncontrolled Airspace

704.29 No person shall, in uncontrolled airspace, conduct an IFR flight or a night VFR flight on a route other than an air route unless the air operator establishes the route in accordance with the *Commercial Air Service Standards*.

704.30 Reserved
(amended 2006/12/01)

Minimum Altitudes and Distances

704.31 For the purposes of sections 602.13 and 602.15, a person may conduct a take-off, approach or landing in a helicopter within a built-up area of a city or town, or operate a helicopter at altitudes and distances less than those specified in subsection 602.14(2), if the person

- (a) has an authorization from the Minister or is authorized to do so in an air operator certificate; and
- (b) complies with the *Commercial Air Service Standards*.

Weight and Balance Control

704.32 (1) No person shall operate an aircraft unless, during every phase of the flight, the load restrictions, weight and centre of gravity of the aircraft conform to the limitations specified in the aircraft flight manual.

(2) An air operator shall have a weight and balance system that meets the *Commercial Air Service Standards*.

(3) An air operator shall specify in its company operations manual its weight and balance system and instructions to employees regarding the preparation and accuracy of weight and balance forms.

Apron and Cabin Safety Procedures

704.33 (1) An air operator shall establish procedures to ensure that

(a) passengers move on the apron and embark and disembark safely, in accordance with procedures that meet the *Commercial Air Service Standards* and that are specified in the air operator's company operations manual;

(b) all passengers are seated and secured in accordance with subsection 605.26(1);

(c) subject to subsection (2), the back of each seat is in the upright position and all chair tables are stowed during movement on the surface, take-off and landing and at such other times as the pilot-in-command considers necessary for the safety of the persons on board the aircraft;

(d) seats located at emergency exits are not occupied by passengers whose presence in those seats could adversely affect the safety of passengers or crew members during an emergency evacuation; and

(e) the flight crew can exercise supervisory control over passengers by visual and aural means.

(2) An air operator may, for the transportation of any passenger who has been certified by a physician as unable to sit upright, allow the back of the seat occupied by such a passenger to remain in the reclining position during movement on the surface, take-off and landing if

(a) the passenger is seated in a location that will not restrict the evacuation of other passengers from the aircraft;

(b) the passenger is not seated in a row that is next to or immediately in front of an emergency exit; and

(c) the seat immediately behind the passenger's seat is vacant.

(3) No air operator shall assign a person to perform duties on board an aircraft unless that person has received the training referred to in paragraph 704.115(2)(d).

(4) No air operator shall permit an aircraft with passengers on board to be fuelled unless the fuelling is carried out in accordance with procedures that meet the *Commercial Air Service Standards* and that are specified in the air operator's company operations manual.

(5) For the purposes of section 602.08, no air operator shall permit the use of a portable electronic device on board an aircraft unless the air operator has established procedures that

(a) meet the *Commercial Air Service Standards*; and

(b) are specified in the air operator's company operations manual.

Briefing of Passengers

704.34 (1) The pilot-in-command shall ensure that passengers are given a safety briefing in accordance with the *Commercial Air Service Standards*.

(2) **If** the safety briefing referred to in subsection (1) is insufficient for a passenger because of that passenger's physical, sensory or comprehension limitations, **seat orientation or responsibility** for another person on board the aircraft, the pilot-in-command shall ensure that the passenger is given an individual safety briefing that **(amended 2009/05/28)**

(a) is appropriate to the passenger's needs; and

(b) meets the *Commercial Air Service Standards*.

(3) The pilot-in-command shall ensure that, in the event of an emergency and where time and circumstances permit, all passengers are given an emergency briefing in accordance with the *Commercial Air Service Standards*.

(4) The pilot-in-command shall ensure that each passenger who is seated next to an emergency exit is made aware of how to operate that exit.

Safety Features Card

704.35 An air operator shall provide each passenger, at the passenger's seat, with a safety features card containing, in pictographic form, the information required by the *Commercial Air Service Standards*, and any wording shall be in English and French.

Instrument Approach Procedures

(amended 2006/12/01)

704.36 (1) No person shall conduct a CAT II or CAT III precision approach unless (amended 2006/12/01)

(a) the air operator is authorized to do so in its air operator certificate; and

(b) the approach is conducted in accordance with the *Manual of All Weather Operations (Categories II and III)*.

(2) No person shall terminate an instrument approach with a landing unless, immediately prior to landing, the pilot-in-command ascertains, by means of radiocommunication or visual inspection,
(amended 2006/12/01)

- (a) the condition of the runway or surface of intended landing; and
- (b) the wind direction and speed.

***Approach Bans — Non-precision, APV, and CAT I
Precision***

(amended 2006/12/01)

704.37 (1) For the purposes of subsections (2) to (4), the visibility with respect to an aeroplane is less than the minimum visibility required for a non-precision approach, an APV or a CAT I precision approach if, in respect of the advisory visibility specified in the *Canada Air Pilot* and set out in column I of an item in the table to this section,
(amended 2006/12/01)

- (a) where the RVR is measured by RVR “A” and RVR “B”, the RVR measured by RVR “A” for the runway of intended approach is less than the visibility set out in column II of the item for the approach conducted;
- (b) where the RVR is measured by only one of RVR “A” and RVR “B”, the RVR for the runway of intended approach is less than the visibility set out in column II of the item for the approach conducted;
- (c) where no RVR for the runway of intended approach is available, the runway visibility is less than the visibility set out in column II of the item for the approach conducted; or
- (d) where the aerodrome is located south of the 60th parallel of north latitude and no RVR or runway visibility for the runway of intended approach is available, the ground visibility at the aerodrome where the runway is located is less than the visibility set out in column II of the item for the approach conducted.

(2) No person shall continue a non-precision approach or an APV unless
(amended 2006/12/01)

- (a) the air operator is authorized to do so in its air operator certificate;
- (b) the aeroplane is equipped with
 - (i) if the flight crew does not use pilot-monitored-approach procedures, an autopilot capable of conducting a non-precision approach or an APV to 400 feet AGL or lower, or
 - (ii) a HUD capable of conducting a non-precision approach or an APV to 400 feet AGL or lower;
- (c) the instrument approach procedure is conducted to straight-in minima; and

(d) a visibility report indicates that

- (i) the visibility is equal to or greater than that set out in subsection (1),
- (ii) the RVR is varying between distances less than and greater than the minimum RVR set out in subsection (1), or
- (iii) the visibility is less than the minimum visibility set out in subsection (1) and, at the time the visibility report is received, the aeroplane has passed the FAF inbound or, where there is no FAF, the point where the final approach course is intercepted.

(3) No person shall continue an SCDA non-precision approach unless
(amended 2006/12/01)

(a) the air operator is authorized to do so in its air operator certificate;

(b) the aeroplane is equipped with

- (i) if the flight crew does not use pilot-monitored-approach procedures, an autopilot capable of conducting a non-precision approach to 400 feet AGL or lower, or
- (ii) a HUD capable of conducting a non-precision approach to 400 feet AGL or lower;

(c) the instrument approach procedure is conducted to straight-in minima with a final approach course that meets the requirements of section 724.37 of Standard 724 — *Commuter Operations — Aeroplanes of the Commercial Air Service Standards*;

(d) the final approach segment is conducted using a stabilized descent with a planned constant descent angle specified in section 724.37 of Standard 724 — *Commuter Operations — Aeroplanes of the Commercial Air Service Standards*; and

(e) a visibility report indicates that

- (i) the visibility is equal to or greater than that set out in subsection (1),
- (ii) the RVR is varying between distances less than and greater than the minimum RVR set out in subsection (1), or
- (iii) the visibility is less than the minimum visibility set out in subsection (1) and, at the time the visibility report is received, the aeroplane has passed the FAF inbound or, where there is no FAF, the point where the final approach course is intercepted.

(4) No person shall continue a CAT I precision approach to a runway with centreline lighting or a CAT I precision approach in an aeroplane equipped with a HUD unless
(amended 2006/12/01)

(a) the air operator is authorized to do so in its air operator certificate;

(b) in the case of an aeroplane not equipped with a HUD,

- (i) if the flight crew does not use pilot-monitored-approach procedures, the pilot-in-command and the second-in-command are qualified to conduct a CAT II precision approach,
 - (ii) the aeroplane is equipped with
 - (A) a flight director and autopilot capable of conducting a coupled precision approach to 200 feet AGL or lower, or
 - (B) if the flight crew uses pilot-monitored-approach procedures, a flight director capable of conducting a precision approach to 200 feet AGL or lower, and
 - (iii) the runway is equipped with serviceable high-intensity approach lighting, high-intensity runway centreline lighting and high-intensity runway edge lighting;
- (c) in the case of an aeroplane equipped with a HUD capable of conducting a precision approach to 200 feet AGL or lower,
- (i) the pilot-in-command and the second-in-command are qualified to conduct a CAT II precision approach,
 - (ii) the aeroplane is equipped with a flight director and autopilot capable of conducting a coupled precision approach to 200 feet AGL or lower, and
 - (iii) the runway is equipped with serviceable high-intensity approach lighting and high-intensity runway edge lighting; and
- (d) a visibility report indicates that
- (i) the visibility is equal to or greater than that set out in subsection (1),
 - (ii) the RVR is varying between distances less than and greater than the minimum RVR set out in subsection (1), or
 - (iii) the visibility is less than the minimum visibility set out in subsection (1) and, at the time the visibility report is received, the aeroplane has passed the FAF inbound or, where there is no FAF, the point where the final approach course is intercepted.

TABLE
APPROACH BANS-VISIBILITY

Item	Column I <i>Canada Air Pilot</i> Advisory Visibility		Column II Visibility Report	
	Statute miles	RVR in feet	Statute miles	Feet
1.	1/2	2 600	1/4	1 200
2.	3/4	4 000	3/8	2 000
3.	1	5 000	1/2	2 600
4.	1 1/4		5/8	3 400
5.	1 1/2		3/4	4 000
6.	1 3/4		1	5 000
7.	2		1	5 000
8.	2 1/4		1 1/4	6 000
9.	2 1/2		1 1/4	greater than 6 000
10.	2 3/4		1 1/2	greater than 6 000
11.	3		1 1/2	greater than 6 000

704.38 to 704.43 Reserved
(amended 2006/12/01)

DIVISION IV - AIRCRAFT PERFORMANCE OPERATING LIMITATIONS

Exceptions

704.44 A person may operate an aircraft without complying with the requirements of this Division if the person

- (a) is authorized to do so in an air operator certificate; and
- (b) complies with the *Commercial Air Service Standards*.

General Requirements

704.45 Any determination made for the purposes of sections 704.46 to 704.50 shall be based on approved performance data set out in the aircraft flight manual.

Take-off Weight Limitations

704.46 (1) No person shall conduct a take-off in an aircraft if the weight of the aircraft

(a) exceeds the maximum take-off weight specified in the aircraft flight manual for the pressure-altitude and the ambient temperature at the aerodrome where the take-off is to be made; or

(b) after allowing for planned fuel consumption during the flight to the destination aerodrome or alternate aerodrome, exceeds the landing weight specified in the aircraft flight manual for the pressure-altitude and the ambient temperature at the destination aerodrome or alternate aerodrome.

(2) In the determination of the maximum take-off weight referred to in subsection (1) for a small aeroplane,

(a) subject to subsection (5), the required accelerate-stop distance shall not exceed the accelerate-stop distance available (ASDA); and

(b) the all-engines-operating take-off distance shall not exceed the take-off distance available (TODA).

(3) Subject to subsection (5), in the determination of the maximum take-off weight referred to in subsection (1) for a large aeroplane,

(a) the required accelerate-stop distance shall not exceed the accelerate-stop distance available (ASDA);

(b) the required take-off run shall not exceed the take-off run available (TORA); and

(c) the required take-off distance shall not exceed the take-off distance available (TODA).

(4) For the purposes of subsections (2) and (3), the following factors shall be taken into account:

(a) the pressure-altitude at the aerodrome;

(b) the ambient temperature;

(c) the runway slope in the direction of take-off; and

(d) not more than 50 per cent of the reported headwind component or not less than 150 per cent of the reported tailwind component.

(5) A person may conduct a take-off without meeting the requirements of paragraph (2)(a) or subsection (3) if the person

(a) is authorized to do so in an air operator certificate; and

(b) complies with the *Commercial Air Service Standards*.

Net Take-off Flight Path

704.47 (1) No person shall conduct a take-off in a large aeroplane if the weight of the aeroplane is greater than the weight specified in the aircraft flight manual as allowing a net take-off flight path that clears all obstacles by at least 35 feet vertically or at least 200 feet horizontally within the aerodrome boundaries, and by at least 300 feet horizontally outside those boundaries, unless

- (a) the take-off is authorized in an air operator certificate; and
- (b) the person complies with the *Commercial Air Service Standards*.

(2) In the determination of the maximum weight, minimum distances and flight path referred to in subsection (1),

- (a) corrections shall be made for
 - (i) the runway to be used,
 - (ii) the runway slope in the direction of take-off,
 - (iii) the pressure-altitude at the aerodrome,
 - (iv) the ambient temperature, and
 - (v) the wind component at the time of take-off, where not more than 50 per cent of the reported headwind component or not less than 150 per cent of the reported tailwind component is considered; and
- (b) calculations shall be based on the pilot
 - (i) not banking the aeroplane before reaching an altitude of 50 feet,
 - (ii) subject to subsection (3), using 15 degrees or less of bank at or below 400 feet, and
 - (iii) using no more than 25 degrees of bank thereafter, aircraft speed and configuration permitting.

(3) A bank angle greater than the 15 degrees referred to in subparagraph (2)(b)(ii) may be used if it is authorized in an air operator certificate.

Enroute Limitations with One Engine Inoperative

704.48 No person shall operate a multi-engined aircraft with passengers on board if the weight of the aircraft is greater than the weight that will allow the aircraft to maintain, with any engine inoperative, the following altitudes:

- (a) when operating in IMC or in IFR flight on airways or air routes, the MOCA of the route to be flown;

(b) when operating in IMC or in night VFR flight on routes established by an air operator, the MOCA of the route to be flown; and

(c) when operating in VFR flight, at least 500 feet above the surface.

***Dispatch Limitations: Landing at Destination
and Alternate Aerodromes***

704.49 (1) Subject to subsection (3), no person shall dispatch or conduct a take-off in a turbo-jet-powered aeroplane or in a large aeroplane unless

(a) the weight of the aeroplane on landing at the destination aerodrome will allow a full-stop landing

(i) in the case of a turbo-jet-powered aeroplane, within 60 per cent of the landing distance available (LDA), or

(ii) in the case of a propeller-driven aeroplane, within 70 per cent of the landing distance available (LDA); and

(b) the weight of the aeroplane on landing at the alternate aerodrome will allow a full-stop landing

(i) in the case of a turbo-jet-powered aeroplane, within 60 per cent of the landing distance available (LDA), or

(ii) in the case of a propeller-driven aeroplane, within 70 per cent of the landing distance available (LDA).

(2) In determining whether an aeroplane can be dispatched or a take-off can be conducted in accordance with subsection (1), the following shall be taken into account:

(a) the pressure-altitude at the destination aerodrome and at the alternate aerodrome;

(b) not more than 50 per cent of the reported headwind component or not less than 150 per cent of the reported tailwind component; and

(c) that the aeroplane must be landed on a suitable runway, considering the wind speed and direction, the ground handling characteristics of the aeroplane, and other conditions such as landing aids and terrain.

(3) Where conditions at the destination aerodrome at the time of take-off do not permit compliance with paragraph (2)(c), an aeroplane may be dispatched and a take-off conducted if the alternate aerodrome designated in the operational flight plan permits, at the time of take-off, compliance with paragraph (1)(b) and subsection (2).

***Dispatch Limitations: Wet Runway —
Turbo-jet-powered Aeroplanes***

704.50 (1) Subject to subsection (2), when weather reports or forecasts indicate that the runway may be wet at the estimated time of arrival, no person shall dispatch or conduct a take-off in a turbo-jet-powered aeroplane unless the landing distance available (LDA) at the destination airport is at least 115 per cent of the landing distance required pursuant to paragraph 704.49(1)(a).

(2) The landing distance available on a wet runway may be shorter than that required by subsection (1), but not shorter than that required by section 704.49, if the aircraft flight manual includes specific information about landing distances on wet runways.

704.51 to 704.61 Reserved

DIVISION V - AIRCRAFT EQUIPMENT REQUIREMENTS

General Requirements

704.62 (1) No person shall operate an aircraft in IMC unless the aircraft is equipped with
(a) at least two generators, each of which, subject to subsection (2), is driven by a separate engine, and at least half of which have a sufficient rating to supply the electrical loads of all instruments and equipment necessary for the safe emergency operation of the aircraft; and
(b) two independent sources of energy and a means of selecting either source, at least one source of energy being an engine-driven pump or generator, and each source of energy being able to drive all gyroscopic instruments and being installed so that the failure of one instrument or one source of energy will affect neither the energy supply to the remaining instruments nor the other source of energy.

(2) In the case of a multi-engined helicopter, the generators required by paragraph (1)(a) may be driven by the main rotor drive train.

(3) No person shall operate an aircraft at night unless the aircraft is equipped with at least one landing light.

Operation of Aircraft in Icing Conditions

704.63 (1) When icing conditions are reported to exist or are forecast to be encountered along the route of flight, no person shall authorize a flight or its continuation or conduct a take-off or continue a flight in an aircraft, even if the pilot-in-command determines that the aircraft is adequately equipped to operate in icing conditions in accordance with paragraph 605.30(a), if, in the opinion of the pilot-in-command, the safety of the flight might be adversely affected.
(amended 2009/05/28)

(2) No person shall operate an aeroplane in icing conditions at night unless the aeroplane is equipped with a means to illuminate or otherwise detect the formation of ice.

***Airborne Thunderstorm Detection and Weather
Radar Equipment***

704.64 No person shall operate an aircraft with passengers on board in IMC when current weather reports or forecasts indicate that thunderstorms may reasonably be expected along the route to be flown, unless the aircraft is equipped with thunderstorm detection equipment or weather radar equipment.

Additional Equipment for Single-pilot Operations

704.65 No person shall operate an aircraft on a single-pilot operation in IMC unless the aircraft is equipped with

- (a) an auto-pilot that is capable of operating the aircraft controls to maintain flight and manoeuvre the aircraft about the lateral and longitudinal axes;
- (b) a headset with a boom microphone or equivalent and a transmit button on the control column; and
- (c) a chart holder that is equipped with a light and that is placed in an easily readable position.

Protective Breathing Equipment

704.66 (1) No air operator shall operate a pressurized aircraft unless protective breathing equipment with a 15-minute supply of breathing gas at a pressure-altitude of 8,000 feet is readily available at each flight crew member position.

(2) The protective breathing equipment referred to in subsection (1) may be used to meet the crew member oxygen requirements specified in section 605.31.

First Aid Oxygen

704.67 No air operator shall operate an aircraft with passengers on board above FL 250 unless the aircraft is equipped with oxygen dispensing units and an undiluted supply of first aid oxygen sufficient to provide at least one passenger with oxygen for at least one hour or the entire duration of the flight at a cabin pressure-altitude above 8,000 feet, after an emergency descent following cabin depressurization, whichever period is longer.

Shoulder Harnesses

704.68 No person shall operate an aircraft unless the pilot seat and any seat beside the pilot seat are equipped with a safety belt that includes a shoulder harness.

Pitot Heat Indication System

(amended 2007/06/30)

704.69 After June 30, 2008, no person shall conduct a take-off in a transport category aeroplane, or in a non-transport category aeroplane in respect of which a type certificate was issued after December 31, 1964, that is equipped with a flight instrument Pitot heating system unless the aeroplane is also equipped with a Pitot heat indication system that meets the requirements of section 525.1326 of Chapter 525 — *Transport Category Aeroplanes* of the *Airworthiness Manual*.

ACAS

(amended 2007/07/01)

704.70 (1) Subject to subsection (4), no air operator shall operate, in airspace outside RVSM airspace, a turbine-powered aeroplane having an MCTOW greater than 5 700 kg (12,566 pounds) but less than or equal to 15 000 kg (33,069 pounds) or an aeroplane that is not a turbine-powered aeroplane having an MCTOW greater than 5 700 kg (12,566 pounds), unless the aeroplane is equipped with an operative ACAS that
(amended 2007/07/01)

(a) meets the requirements of CAN-TSO-C118 or a more recent version of it or other requirements that the Minister has accepted as providing a level of safety that is at least equivalent to the level that that CAN-TSO provides; or
(amended 2009/12/01)

(b) meets the requirements of CAN-TSO-C119a or a more recent version of it or other requirements that the Minister has accepted as providing a level of safety that is at least equivalent to the level that that CAN-TSO provides and is equipped with a Mode S transponder that meets the requirements of CAN-TSO-C112 or a more recent version of it.
(amended 2009/12/01)

(2) Subject to subsection (4), no air operator shall operate a turbine-powered aeroplane having an MCTOW greater than 15 000 kg (33,069 pounds) in airspace outside RVSM airspace unless the aeroplane is equipped with an operative ACAS that
(amended 2007/07/01)

(a) meets the requirements of CAN-TSO-C119a or a more recent version of it or other requirements that the Minister has accepted as providing a level of safety that is at least equivalent to the level that that CAN-TSO provides; and
(amended 2009/12/01)

(b) is equipped with a Mode S transponder that meets the requirements of CAN-TSO-C112 or a more recent version of it.
(amended 2009/12/01)

(3) Subject to subsection (4), no air operator shall operate an aeroplane referred to in subsection (1) or (2) in RVSM airspace unless the aeroplane is equipped with an operative

ACAS that
(amended 2007/07/01)

(a) meets the requirements of CAN-TSO-C119b or a more recent version of it or other requirements that the Minister has accepted as providing a level of safety that is at least equivalent to the level that that CAN-TSO provides; and

(amended 2009/12/01)

(b) is equipped with a Mode S transponder that meets the requirements of CAN-TSO-C112 or a more recent version of it.

(amended 2009/12/01)

(4) The air operator may operate the aeroplane without its being equipped with an operative ACAS if

(amended 2007/07/01)

(a) where a minimum equipment list has not been approved by the Minister and subject to subsection 605.08(1), the operation takes place within the three days after the date of failure of the ACAS; or

(b) it is necessary for the pilot-in-command to deactivate, in the interests of aviation safety, the ACAS or any of its modes and the pilot-in-command does so in accordance with the aircraft flight manual, aircraft operating manual, flight manual supplement or minimum equipment list.

(5) This section does not apply in respect of aeroplanes manufactured on or before the day on which this section comes into force until two years after that day.

(amended 2007/07/01)

704.71 to 704.82 Reserved

(amended 2007/07/01)

DIVISION VI - EMERGENCY EQUIPMENT

Hand-held Fire Extinguisher

704.83 No air operator shall operate an aircraft with passengers on board unless at least one hand-held fire extinguisher is readily accessible for immediate use and is located in the passenger compartment.

Equipment Standards and Inspection

704.84 No air operator shall operate an aircraft unless the emergency equipment carried on board the aircraft pursuant to Division II of Subpart 2 of Part VI or this Division meets the *Commercial Air Service Standards* and is inspected regularly in accordance with the inspection schedule set out in the air operator's company operations manual.

704.85 to 704.105 Reserved

DIVISION VII - PERSONNEL REQUIREMENTS

Minimum Crew

704.106 No air operator shall operate an aircraft with fewer than two pilots, where the aircraft

- (a) is an aeroplane carrying 10 or more passengers; or
- (b) is carrying passengers and is being operated in IFR flight.

Designation of Pilot-in-command and Second-in-command

704.107 An air operator shall designate for each flight a pilot-in-command and, where the crew includes two pilots, a pilot-in-command and a second-in-command.

Flight Crew Member Qualifications

704.108 (1) Subject to subsection (6), no air operator shall permit a person to act and no person shall act as a flight crew member in an aircraft unless the person

- (a) holds the licence and ratings required by Part IV;
- (b) within the previous 90 days, has completed at least three take-offs and three landings
 - (i) where a type rating for that aircraft is required, in an aircraft of that type, or in a flight simulator representing that type of aircraft that has been approved by the Minister under Subpart 6 of Part VI for take-off and landing qualifications, or
 - (ii) where a type rating for that aircraft is not required, in an aircraft of that category and class, or in a flight simulator representing that category and class of aircraft that has been approved by the Minister under Subpart 6 of Part VI for take-off and landing qualifications;
- (c) has successfully completed a pilot proficiency check, the validity period of which has not expired, for that type of aircraft, in accordance with the *Commercial Air Service Standards*; and
- (d) has fulfilled the requirements of the air operator's ground training program and, except where undergoing line indoctrination training, the air operator's flight training program.

(2) An air operator may group similar aircraft as a single type for the purposes of the pilot proficiency check referred to in paragraph (1)(c) if the air operator

- (a) is authorized to do so in its air operator certificate; and
- (b) complies with the *Commercial Air Service Standards*.

(3) No person shall act as the pilot-in-command of an aircraft with passengers on board in IFR flight unless the person has acquired at least 1,200 hours of flight time as a pilot.

(4) No person shall act as the pilot-in-command of an aircraft in VFR flight unless the person has acquired at least 500 hours of flight time as a pilot.

(5) No person shall act as the pilot-in-command of an aircraft with a person other than a flight crew member on board in night VFR flight unless the person acting as the pilot-in-command holds an instrument rating for that class of aircraft.

(6) An air operator may permit a person to act and a person may act as a flight crew member in an aircraft where the person does not meet the requirements of paragraphs (1)(b) to (d), if

(a) the aircraft is operated on a training, ferry or positioning flight; or

(b) the air operator

(i) is authorized to do so in its air operator certificate, and

(ii) complies with the *Commercial Air Service Standards*.

Qualifications of Operational Control Personnel

704.109 (1) No air operator shall permit a person to act and no person shall act in an operational control position unless that person has fulfilled the training requirements set out in this Subpart and has demonstrated to the air operator the knowledge and abilities required by the *Commercial Air Service Standards*.

(2) A person who has not acted in an operational control position within the previous three months shall, prior to acting in an operational control position, demonstrate to the air operator that the person still has the knowledge and abilities referred to in subsection (1).

Check Authority

704.110 (1) A pilot proficiency check shall be conducted by the Minister.

(2) Any other check required under this Subpart may be conducted by the Minister.

Validity Period

704.111 (1) Subject to subsections (2) and (3), the validity period of a pilot proficiency check and of the annual training referred to in section 704.115 expires on the first day of the thirteenth month following the month in which the proficiency check or training was completed.

(2) Where a pilot proficiency check or annual training is renewed within the last 90 days of its validity period, its validity period is extended by 12 months.

(3) The Minister may extend the validity period of a pilot proficiency check or annual training by up to 60 days where the Minister is of the opinion that aviation safety is not likely to be affected.

(4) Where the validity period of a pilot proficiency check or annual training has been expired for 24 months or more, the person shall requalify by meeting the training requirements specified in the *Commercial Air Service Standards*.

704.112 to 704.114 Reserved

DIVISION VIII - TRAINING

Training Program

704.115 (1) Every air operator shall establish and maintain a ground and flight training program that is

(a) designed to ensure that each person who receives training acquires the competence to perform the person's assigned duties; and

(b) approved by the Minister in accordance with the *Commercial Air Service Standards*.

(2) An air operator's ground and flight training program shall include

(a) for flight crew members:

(i) company indoctrination training,

(ii) line indoctrination training,

(iii) high-altitude training, where applicable,

(iv) upgrading training, where applicable, and

(v) initial and annual training, including

(A) aircraft type training,

(B) aircraft servicing and ground handling training,

(C) emergency procedures training, and

(D) aircraft surface contamination training;

(b) initial and annual training for operational control personnel;

(c) initial and annual aircraft surface contamination training for those operations personnel designated in the *Commercial Air Service Standards*;

(d) initial and annual training for personnel who are assigned to perform duties on board an aircraft; and

(e) any other training required to ensure a safe operation under this Subpart.

(3) An air operator shall

(a) include a detailed syllabus of its ground and flight training program in its company operations manual;

(b) ensure that adequate facilities and qualified personnel are provided for its ground and flight training program, in accordance with the *Commercial Air Service Standards*; and

(c) establish and maintain a safety awareness program concerning the adverse effects of aircraft surface contamination and provide the program to all flight operations personnel who are not required to receive the training described in paragraph (2)(c).

Conditional Approval of Training Program

704.116 (1) The Minister may give conditional approval to a training program where an air operator submits to the Minister a copy of a syllabus of its training program that provides enough information for a preliminary evaluation of the training program in light of the *Commercial Air Service Standards*.

(2) An air operator may conduct training under a training program that has received conditional approval until the Minister has evaluated the effectiveness of the training program and has informed the air operator of any deficiencies that must be corrected.

(3) The Minister shall give final approval to a conditionally approved training program when the air operator demonstrates that the training conducted under that program is adequate to permit the persons who receive it to safely perform their assigned duties.

Training and Qualification Records

704.117 (1) Every air operator shall, for each person who is required to receive training under this Subpart, establish and maintain a record of

(a) the person's name and, where applicable, personnel licence number, type and ratings;

(b) if applicable, the person's medical category and the expiry date of that category;

(c) the dates on which the person, while in the air operator's employ, successfully completed any training, pilot proficiency check or examination required under this Subpart or obtained any qualification required under this Subpart;

(d) information relating to any failure of the person, while in the air operator's employ, to successfully complete any training, pilot proficiency check or examination required under this Subpart or to obtain any qualification required under this Subpart; and

(e) the type of aircraft or flight training equipment used for any training, pilot proficiency check or qualification required under this Subpart.

(2) An air operator shall retain the records referred to in paragraphs (1)(c) and (d) and a record of each pilot proficiency check for at least three years.

(3) An air operator shall retain a copy of the most recent written examination completed by each pilot for each type of aircraft for which the pilot has a qualification.

704.118 and 704.119 Reserved

DIVISION IX - MANUALS

Requirements Relating to Company Operations Manual

704.120 (1) Every air operator shall establish and maintain a company operations manual that meets the requirements of section 704.121.

(2) An air operator shall submit its company operations manual, and any amendments to that manual, to the Minister.

(3) Where there is a change in any aspect of an air operator's operation or where the company operations manual no longer meets the *Commercial Air Service Standards*, the air operator shall amend its company operations manual.

(4) The Minister shall, where the *Commercial Air Service Standards* are met, approve those parts of a company operations manual, and any amendments to those parts, that relate to the information required by section 704.121.

Contents of Company Operations Manual

704.121 (1) A company operations manual, which may be issued in separate parts corresponding to specific aspects of an operation, shall include the instructions and information necessary to enable the personnel concerned to perform their duties safely and shall contain the information required by the *Commercial Air Service Standards*.

(2) A company operations manual shall be such that

(a) all parts of the manual are consistent and compatible in form and content;

(b) the manual can be readily amended;

(c) the manual contains an amendment control page and a list of the pages that are in effect; and

(d) the manual has the date of the last amendment to each page specified on that page.

Distribution of Company Operations Manual

704.122 (1) Subject to subsection (2), an air operator shall provide a copy of the appropriate parts of its company operations manual, including any amendments to those parts, to each of its crew members and to its ground operations and maintenance personnel.

(2) An air operator may place a copy of the appropriate parts of its company operations manual in each aircraft that it operates, instead of providing a copy to each crew member, if all amendments to the manual are included in the system for the dissemination of general operational information referred to in section 704.13.

(3) Every person who has been provided with a copy of the appropriate parts of a company operations manual pursuant to subsection (1) shall keep it up to date with the amendments provided and shall ensure that the appropriate parts are accessible when the person is performing assigned duties.

Aircraft Operating Manual

704.123 (1) An air operator may establish and maintain an aircraft operating manual for the use and guidance of crew members in the operation of its aircraft.

(2) An aircraft operating manual shall contain

(a) the aircraft operating procedures; and

(b) where the aircraft flight manual is not carried on board the aircraft, the aircraft performance data and limitations specified in the aircraft flight manual, which shall be clearly identified as aircraft flight manual requirements.

(3) An air operator that has established an aircraft operating manual shall ensure that a copy of the manual is carried on board each aircraft to which it relates.

Standard Operating Procedures

704.124 (1) Every air operator shall, for each of its aircraft that is required to be operated by two or more pilots, establish and maintain standard operating procedures that enable the crew members to operate the aircraft within the limitations specified in the aircraft flight manual and that meet the *Commercial Air Service Standards*.

(2) An air operator that has established standard operating procedures for an aircraft shall ensure that a copy of the standard operating procedures is carried on board the aircraft.

(3) Where an air operator has established an aircraft operating manual, the standard operating procedures for the aircraft shall form part of that manual.

704.125 to 704.127 Reserved



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CANADIAN AVIATION REGULATIONS

PART VII - COMMERCIAL AIR SERVICES



SUBPART 5 - AIRLINE OPERATIONS

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* All persons making use of this consolidation are reminded that it is not an "official" copy. The original regulations and amendments thereto, as published in Part II of the *Canada Gazette*, should be consulted for the purpose of officially interpreting and applying the regulations.

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PART VII — COMMERCIAL AIR SERVICES

SUBPART 5 — AIRLINE OPERATIONS

DIVISION I - GENERAL

Application

705.01 This Subpart applies in respect of the operation by a Canadian air operator, in an air transport service or in aerial work involving sightseeing operations, of any of the following aircraft:

- (a) an aeroplane, other than an aeroplane authorized to operate under Subpart 4, that has a MCTOW of more than 8 618 kg (19,000 pounds) or for which a Canadian type certificate has been issued authorizing the transport of 20 or more passengers;
- (b) a helicopter that has a seating configuration, excluding pilot seats, of 20 or more; or
- (c) any aircraft that is authorized by the Minister to be operated under this Subpart.

Aircraft Operation

705.02 No air operator shall operate an aircraft under this Subpart unless the air operator complies with the conditions and operations specifications in an air operator certificate issued to that operator by the Minister pursuant to section 705.07.

Operations Manager

(amended 2005/05/31)

705.03 (1) The operations manager shall manage the activities of the air operator in accordance with the company operations manual established under section 705.134.
(amended 2005/05/31)

(2) The operations manager appointed under paragraph 700.09(1)(a) shall, where a finding resulting from a quality assurance program established under section 706.07 or a safety management system referred to in section 705.151 is reported to them,

- (a) determine what, if any, corrective actions are required and carry out those actions;
- (b) keep a record of any determination made under paragraph (a) and the reason for it;
- (c) if management functions have been assigned to another person under subsection (3) or (4), communicate any determination regarding a corrective action to that person; and
- (d) notify the accountable executive of any systemic deficiency and of the corrective action taken.

(3) The operations manager may assign the management functions for the entire safety management system referred to in section 705.151 to another person if the assignment and its scope are described in the air operator's company operations manual.

(4) The operations manager may assign the management functions for specific duties to another person if the assignment and its scope are described in the air operator's company operations manual.

(5) The responsibility of the operations manager is not affected by the assignment of management functions to another person under subsection (3) or (4).

Holder of More Than One Certificate
(amended 2005/05/31)

705.04 If the holder of an air operator certificate issued under section 705.07 is also the holder of an approved maintenance organization (AMO) certificate issued under section 573.02, the person responsible for maintenance appointed under paragraph 573.03(1)(a) shall, where a finding resulting from a quality assurance program established under section 706.07 is reported to them,
(amended 2005/05/31)

- (a) determine what, if any, corrective actions are required and carry out those actions;
- (b) keep a record of any determination made under paragraph (a) and the reason for it;
- (c) if management functions have been assigned to another person under subsection 573.04(4) or (5), communicate any determination regarding a corrective action to that person; and
- (d) notify the accountable executive of any systemic deficiency and of the corrective action taken.

705.05 and 705.06 Reserved

DIVISION II - CERTIFICATION

Issuance or Amendment of Air Operator Certificate

705.07 (1) Subject to section 6.71 of the Act, the Minister shall, on receipt of an application submitted in the form and manner required by the *Commercial Air Service Standards*, issue or amend an air operator certificate where the applicant demonstrates to the Minister the ability to

- (a) maintain an adequate organizational structure;
- (b) maintain an operational control system;
- (c) meet training program requirements;
- (d) comply with maintenance requirements;

(e) meet the *Commercial Air Service Standards* for the operation; and

(f) conduct the operation safely.

(2) For the purposes of subsection (1), an applicant shall have

(a) a management organization capable of exercising operational control;

(b) managerial personnel who have been approved by the Minister in accordance with the *Commercial Air Service Standards*, are employed on a full-time basis and perform the functions related to the following positions, namely,

(i) operations manager,

(ii) chief pilots,

(iii) where the applicant does not hold an approved maintenance organization (AMO) certificate, maintenance manager, and

(iv) where flight attendants are required for the operation, flight attendant manager;

(c) a safety management system that meets the requirements of Subpart 7 of Part I and section 705.152;

(amended 2005/11/21)

(d) operational support services and equipment that meet the *Commercial Air Service Standards*;

(e) after January 1, 1997, where a master minimum equipment list has been established for a type of aircraft, a minimum equipment list for each aircraft of that type, approved by the Minister in accordance with the procedures specified in the *MMEL/MEL Policy and Procedures Manual*;

(f) aircraft that are properly equipped for and crew members who are qualified for the area of operation and the type of operation;

(g) an operational control system that meets the requirements of section 705.20;

(h) a training program that meets the requirements of section 705.124;

(i) legal custody and control of at least one aircraft of each category of aircraft that is to be operated;

(j) a company operations manual that meets the requirements of sections 705.134 and 705.135;

(k) a maintenance control system approved pursuant to Subpart 6; and

(l) an air operator emergency response plan that has the components set out in subsection 725.07(3) of Standard 725 — *Airline Operations — Aeroplanes* of the *Commercial Air Service Standards*.

(amended 2005/05/31)

Contents of Air Operator Certificate

705.08 An air operator certificate shall contain

- (a) the legal name, trade name and address of the air operator;
- (b) the number of the air operator certificate;
- (c) the effective date of certification;
- (d) the date of issue of the certificate;
- (e) the general conditions identified in section 705.09;
- (f) specific conditions with respect to
 - (i) the areas of operation authorized,
 - (ii) the types of service authorized,
 - (iii) the types of aircraft authorized and, if applicable, their registration, and any operational restrictions, and
 - (iv) the main base, scheduled points and, if applicable, sub-bases; and
(amended 2009/05/28)
- (g) where the air operator complies with the *Commercial Air Service Standards*, operations specifications with respect to
 - (i) aircraft performance, equipment and emergency equipment requirements,
 - (ii) instrument approach procedures,
 - (iii) enroute aerodrome authorizations and limitations,
 - (iv) special weather minima authorizations,
 - (v) authorizations concerning flight crew member qualifications and crew member complement,
 - (vi) navigation system authorizations,
 - (vii) pilot training and pilot proficiency checks,
 - (viii) the air operator maintenance control system approved pursuant to Subpart 6,
 - (ix) leasing arrangements,
 - (x) the use of synthetic flight training devices, and
 - (xi) any other condition pertaining to the operation that the Minister deems necessary for aviation safety.

General Conditions of Air Operator Certificate

705.09 An air operator certificate shall contain the following general conditions:

- (a) the air operator shall conduct flight operations in accordance with its company operations manual;
- (b) the air operator shall maintain an adequate organizational structure;
- (c) the air operator shall employ managerial personnel who meet the *Commercial Air Service Standards*;
- (d) the air operator shall conduct training in accordance with its training program approved pursuant to this Subpart;
- (e) the air operator shall maintain aircraft that are properly equipped for the area of operation and the type of operation;
- (f) the air operator shall employ crew members who are qualified for the area of operation and the type of operation;
- (g) the air operator shall maintain its aircraft in accordance with the requirements of Subpart 6;
- (h) the air operator shall maintain operational support services and equipment that meet the *Commercial Air Service Standards*;
- (i) the air operator shall notify the Minister within 10 working days after
(amended 2009/05/28)
 - (i) changing its legal name, its trade name, its main base, a sub-base, a scheduled point or its managerial personnel, or
(amended 2009/05/28)
 - (ii) ceasing to operate a type of aircraft authorized under this Subpart; and
(amended 2009/05/28)
- (j) the air operator shall conduct a safe operation.

705.10 to 705.15 Reserved

DIVISION III - FLIGHT OPERATIONS

Exceptions

705.16 (1) Sections 705.40, 705.43, 705.75, 705.77 to 705.79, 705.104 and 705.139 do not apply where nine or fewer persons are on board an aircraft and each person is

- (a) an employee of the air operator;
- (b) a person whose presence on board the aircraft is necessary for
 - (i) the safety of the flight,
 - (ii) the safe handling of animals,
 - (iii) the safe handling of dangerous goods,
 - (iv) the security of valuable or confidential cargo,
 - (v) the preservation of fragile or perishable cargo, or
 - (vi) the handling of cargo;
- (c) a person described in paragraph (b) who is travelling to or from an assignment;
- (d) an owner or shipper of animals; or
- (e) a dependant of an employee of the air operator.

(2) Any person referred to in subsection (1) may be carried on board an aircraft for which the type certificate does not authorize the transport of passengers.

(3) No air operator shall operate an aircraft with a person referred to in subsection (1) on board unless

- (a) the air operator has established procedures for the transport of that person;
- (b) the person has unobstructed access from the person's seat to the flight deck, to an exit or to an emergency exit;
- (c) the person is provided with a means of two-way communication with the flight crew members;
- (d) the pilot-in-command has a means of notifying the person when safety belts must be fastened; and
- (e) the air operator ensures that, before every take-off, the person is given a briefing by a crew member in accordance with the *Commercial Air Service Standards*.

Operating Instructions

705.17 (1) An air operator shall ensure that all operations personnel are properly instructed about their duties and about the relationship of their duties to the operation as a whole.

(2) The operations personnel of an air operator shall follow the procedures specified in the air operator's company operations manual in the performance of their duties.

General Operational Information

705.18 Every air operator shall establish a system for the timely dissemination of general operational information that includes a means for each crew member and each flight dispatcher to acknowledge receipt of that information.

(amended 2009/05/28)

Scheduled Air Service Requirements

705.19 (1) Subject to subsection (2), every air operator that operates a scheduled air service for the purpose of transporting persons shall operate the service between airports or heliports or between an airport or heliport and a military aerodrome.

(amended 2007/06/30)

(2) An air operator may operate a scheduled air service for the purpose of transporting persons between an airport and an aerodrome or between two aerodromes if the air operator is authorized to do so in its air operator certificate.

Operational Control System

705.20 No air operator shall operate an aircraft unless the air operator has an operational control system that meets the *Commercial Air Service Standards* and is under the control of its operations manager.

Flight Authorization

705.21 No person shall commence a flight unless the flight has been authorized in accordance with the procedures specified in the air operator's company operations manual.

Operational Flight Plan

705.22 (1) No air operator shall permit a person to commence a flight unless an operational flight plan that meets the *Commercial Air Service Standards* has been prepared in accordance with the procedures specified in the air operator's company operations manual.

(1.1) An air operator shall specify in its company operations manual
(amended 1999/06/01)

(a) the period for which the operational flight plan referred to in subsection (3) shall be kept;

(b) the method of recording the formal approval of the plan by the flight dispatcher; and

(c) the method of recording the formal approval of the plan by the pilot-in-command.

(2) The pilot-in-command of an aircraft shall ensure that one copy of the operational flight plan is left at a point of departure, in accordance with the procedures specified in the company operations manual, and that another copy is carried on board the aircraft until the aircraft reaches the final destination of the flight.

(3) An air operator shall keep a copy of the operational flight plan, including any amendments to that plan, for not less than 90 days.

(amended 1999/06/01)

Maintenance of Aircraft

705.23 No air operator shall permit a person to conduct a take-off in an aircraft that has not been maintained in accordance with the air operator's maintenance control system.

Checklist

705.24 (1) Every air operator shall establish the checklist referred to in paragraph 602.60(1)(a) for each aircraft type that it operates and shall make the appropriate parts of the checklist readily available to the crew members.

(2) Every crew member shall follow the checklist referred to in subsection (1) in the performance of the crew member's assigned duties.

Fuel Requirements

705.25 (1) Subject to subsection (2), no air operator shall authorize a flight and no person shall commence a flight unless the aircraft

(a) when operating in VFR flight, carries sufficient fuel to fly to the destination aerodrome and thereafter to fly for 45 minutes at normal cruising speed;

(b) when operating in IFR flight on designated routes or over designated areas as defined in the *Commercial Air Service Standards*, carries an enroute fuel reserve of five per cent of the fuel required to fly to the destination aerodrome; and

(c) when operating in IFR flight, except when complying with the *Safety Criteria for Approval of Extended Range Twin-engine Operations (ETOPS) Manual*, carries sufficient fuel to allow the aircraft

(i) to descend at any point along the route to the lower of

(A) the one-engine-inoperative service ceiling, or

(B) 10,000 feet ASL,

(ii) to cruise at the altitude referred to in subparagraph (i) to a suitable aerodrome,

- (iii) to conduct an approach and a missed approach, and
- (iv) to hold for 30 minutes at an altitude of 1,500 feet above the elevation of the aerodrome selected in accordance with subparagraph (ii).

(2) An air operator may be authorized in an air operator certificate to reduce the enroute fuel reserve required by paragraph (1)(b) where the air operator complies with the *Commercial Air Service Standards*.

Extended Range Twin-engined Operations

705.26 (1) Subject to subsection (2), no air operator shall operate a twin-engined aeroplane on a route containing a point that is farther from an adequate aerodrome than the distance that can be flown in 60 minutes at the one-engine-inoperative cruise speed, unless the flight is conducted wholly within Canadian Domestic Airspace.

(2) An air operator may operate an aeroplane on a route referred to in subsection (1) where

- (a) the aeroplane is turbine-powered;
- (b) the air operator is authorized to do so in its air operator certificate; and
- (c) the air operator complies with the *Safety Criteria for Approval of Extended Range Twin-engine Operations (ETOPS) Manual*.

Admission to Flight Deck

705.27 (1) Where a Department of Transport air carrier inspector presents an official identity card to the pilot-in-command of an aircraft, the pilot-in-command shall give the inspector free and uninterrupted access to the flight deck of the aircraft.

(2) An air operator and the pilot-in-command shall make available for the use of the air carrier inspector the observer seat most suitable to perform the inspector's duties, as determined by the inspector.

(3) No person shall be admitted to the flight deck of an aeroplane other than
(amended 2002/03/21)

- (a) a flight crew member;
- (b) a crew member performing their duties;
- (c) an inspector referred to in subsection (1);
- (d) in accordance with the procedures specified in the company operations manual,
 - (i) an employee of the air operator who is not a crew member performing their duties, and
 - (ii) a pilot, flight engineer or flight attendant employed by a wholly owned subsidiary or a code share partner of the air operator; and

(e) a person who has expertise related to the aeroplane, its equipment or its crew members and who is required to be in the flight deck to provide a service to the air operator.

(4) The air operator shall verify
(amended 2002/03/21)

(a) in the case of a person referred to in paragraph (3)(d) or (e), the identity of the person by means of a personal photo identification issued by the air operator, its wholly owned subsidiary, its code share partner or a foreign government or a restricted area pass as defined in the *Canadian Aviation Security Regulations*, and

(b) in the case of a person referred to in paragraph (3)(d), the fact that

(i) the person is currently employed by the air operator, or by a wholly owned subsidiary or code share partner of the air operator; and

(ii) no seat is available for the person in the passenger compartment.

(5) No person referred to in paragraph (3)(d), except an employee of the air operator who is undergoing the aircraft cockpit familiarization required for the performance of their duties, shall be admitted to the flight deck if a seat is available in the passenger compartment.
(amended 2002/03/21)

Seats for Cabin Safety Inspectors

705.28 An air operator shall provide a cabin safety inspector who is performing an in-flight cabin inspection with a confirmed passenger seat in the passenger compartment.

Flight Crew Members at Controls

705.29 (1) Subject to subsection (2), flight crew members who are on flight deck duty shall remain at their duty stations with their safety belts fastened and, where the aircraft is below 10,000 feet ASL, with their safety belts, including their shoulder harnesses, fastened.

(2) Flight crew members may leave their duty stations where

(a) their absence is necessary for the performance of duties in connection with the operation of the aircraft;

(b) their absence is in connection with physiological needs; or

(c) they are taking a rest period and are relieved by other flight crew members who meet the qualifications set out in the *Commercial Air Service Standards*.

Simulation of Emergency Situations

705.30 No person shall, where passengers are on board an aircraft, simulate emergency situations that could affect the flight characteristics of the aircraft.

Crew Member Briefing

705.31 The pilot-in-command of an aircraft shall ensure that, prior to each flight or series of flight segments, the crew members of the aircraft are given a pre-flight briefing that meets the *Commercial Air Service Standards*.

VFR Flight Obstacle Clearance Requirements

705.32 Except when conducting a take-off or landing, no person shall operate an aeroplane in VFR flight

(a) during the day, at less than 1,000 feet AGL or at a horizontal distance of less than 1,000 feet from any obstacle; or

(b) at night, at less than 1,000 feet above the highest obstacle located within a horizontal distance of five miles from the route to be flown or, in designated mountainous regions, at less than 2,000 feet above the highest obstacle located within a horizontal distance of five miles from the route to be flown.

VFR Flight Weather Conditions

705.33 No person shall commence a VFR flight unless current weather reports and forecasts, if obtainable, indicate that the weather conditions along the route to be flown and at the destination aerodrome will be such that the flight can be conducted in compliance with VFR.

Take-off Minima

705.34 (1) Subject to subsection (2), no person shall conduct a take-off in an aircraft in IMC where weather conditions are at or above the take-off minima, but below the landing minima, for the runway to be used unless an alternate aerodrome is specified in the operational flight plan and that aerodrome is located

(a) in the case of a twin-engined aircraft, within the distance that can be flown in 60 minutes at the one-engine-inoperative cruise speed; or

(b) in the case of a three- or four-engined aircraft or where an air operator is authorized in its air operator certificate to conduct ETOPS with the type of aircraft operated, within the distance that can be flown in 120 minutes at the one-engine-inoperative cruise speed.

(2) A person may conduct a take-off in an aircraft in IMC where weather conditions are at or above the take-off minima, but below the landing minima, for the runway to be used, if the weather conditions are at or above the landing minima for another suitable runway at that aerodrome, taking into account the aircraft performance operating limitations specified in Division IV.

(3) For the purposes of section 602.126, a person may conduct a take-off in an aircraft in IMC where weather conditions are below the take-off minima specified in the instrument approach procedure, if the person

- (a) is authorized to do so in an air operator certificate; and
- (b) complies with the *Commercial Air Service Standards*.

(4) For the purposes of this section, the landing minima are the decision height or the minimum descent altitude and the visibility published for an approach.

No Alternate Aerodrome - IFR Flight

705.35 For the purposes of section 602.122, a person may conduct an IFR flight where an alternate aerodrome has not been designated in the IFR flight plan or in the IFR flight itinerary, if the person

- (a) is authorized to do so in an air operator certificate; and
- (b) complies with the *Commercial Air Service Standards*.

VFR OTT Flight

705.36 No person shall operate an aircraft in VFR OTT flight unless

- (a) the aircraft is a helicopter;
- (b) the person is authorized to do so in an air operator certificate; and
- (c) the person complies with the *Commercial Air Service Standards*

Routes in Uncontrolled Airspace

705.37 No person shall, in uncontrolled airspace, conduct an IFR flight or a night VFR flight on a route other than an air route unless the air operator establishes the route in accordance with the *Commercial Air Service Standards*.

705.38 Reserved
(amended 2006/12/01)

Weight and Balance Control

705.39 (1) No person shall operate an aircraft unless, during every phase of the flight, the load restrictions, weight and centre of gravity of the aircraft conform to the limitations specified in the aircraft flight manual.

(2) An air operator shall have a weight and balance system that meets the *Commercial Air Service Standards*.

(3) An air operator shall keep a copy of the weight and balance forms, including any amendments to the forms, for not less than 90 days.

(amended 1999/06/01)

(4) An air operator shall specify in its company operation manual

(amended 1999/06/01)

(a) its weight and balance system;

(b) its instructions to employees regarding the preparation and accuracy of weight and balance forms; and

(c) the period for which the forms shall be kept.

Passenger and Cabin Safety Procedures

705.40 (1) An air operator shall establish procedures to ensure that

(a) passengers move to and from the aircraft and embark and disembark safely, in accordance with procedures that meet the *Commercial Air Service Standards* and that are specified in the air operator's company operations manual;

(b) all passengers are seated and secured in accordance with subsection 605.26(1);

(c) subject to subsection (2), the back of each seat is in the upright position and all chair tables and carry-on baggage are stowed during movement on the surface, take-off and landing and at such other times as the pilot-in-command considers necessary for the safety of the persons on board the aircraft; and

(d) seats located at emergency exits and seats that are not located on the main deck of an aircraft are not occupied by passengers whose presence in those seats could adversely affect the safety of passengers or crew members during an emergency evacuation.

(2) An air operator may, for the transportation of any passenger who has been certified by a physician as unable to sit upright, allow the back of the seat occupied by such a passenger to remain in the reclining position during movement on the surface, take-off and landing if

(a) the passenger is seated in a location that will not restrict the evacuation of other passengers from the aircraft;

(b) the passenger is not seated in a row that is next to or immediately in front of an emergency exit; and

(c) the seat immediately behind the passenger's seat is vacant.

(3) No air operator shall permit an aircraft with passengers on board to be fuelled unless the fuelling is carried out in accordance with procedures that meet the *Commercial Air Service Standards* and that are specified in the air operator's company operations manual.

(4) For the purposes of section 602.08, no air operator shall permit the use of a portable electronic device on board an aircraft unless the air operator has established procedures that

- (a) meet the *Commercial Air Service Standards*; and
- (b) are specified in the air operator's company operations manual.

Flight Attendant Stations

705.41 (1) Each flight attendant shall, for take-off and landing, occupy a seat in the passenger cabin that meets the requirements of subsection (2).

(2) Each flight attendant station shall be approved by the Minister in accordance with the *Commercial Air Service Standards*.

(3) No air operator shall permit a flight attendant seat to be occupied by a person other than a flight attendant unless the air operator

- (a) is authorized to do so in its air operator certificate; and
- (b) complies with the *Commercial Air Service Standards*.

Carry-on Baggage

705.42 (1) Every air operator shall establish a carry-on baggage control program that is approved by the Minister in accordance with the *Commercial Air Service Standards*.

(2) No air operator shall permit a person to carry on board an aircraft any carry-on baggage unless that baggage has been accepted in accordance with a carry-on baggage control program and can be

(a) stowed in a compartment or overhead rack that has been approved by the Minister in accordance with Chapter 551 of the *Airworthiness Manual* for the stowage of carry-on baggage;
(amended 1999/06/01)

(b) stowed under a passenger seat; or

(c) restrained by a means that has been approved by the Minister in accordance with Chapter 551 of the *Airworthiness Manual*.
(amended 1999/06/01)

(3) No person shall carry on board an aircraft any carry-on baggage unless that baggage has been accepted in accordance with a carry-on baggage control program.

(4) All carry-on baggage that is stowed under a passenger seat shall be restrained in a manner that has been approved by the Minister in accordance with Chapter 551 of the *Airworthiness Manual*.
(amended 1999/06/01)

(5) All carry-on baggage shall be stowed so that it does not obstruct access to safety equipment, exits or the aisles of the aircraft.

(6) No air operator shall allow the passenger entry doors of an aircraft to be closed for departure until a crew member has verified that all carry-on baggage is stowed in a location that has been approved by the Minister in accordance with Chapter 551 of the *Airworthiness Manual* or is restrained by a means that has been approved by the Minister in accordance with Chapter 551 of the *Airworthiness Manual*.
(amended 1999/06/01)

(7) All carry-on baggage shall be safely stowed prior to movement of the aircraft on the surface and during take-off, periods of in-flight turbulence and landing.

(8) No carry-on baggage that may cause injury to passengers in the event of turbulence or an emergency shall be stowed in an overhead rack unless that rack is equipped with restraining devices or doors that have been approved by the Minister in accordance with Chapter 551 of the *Airworthiness Manual*.
(amended 1999/06/01)

Briefing of Passengers

705.43 (1) An air operator shall ensure that passengers are given a safety briefing in accordance with the *Commercial Air Service Standards*.

(2) An air operator shall ensure that the safety briefing referred to in subsection (1) is given in English and French.

(3) **If** the safety briefing referred to in subsection (1) is insufficient for a passenger because of that passenger's physical, sensory or comprehension limitations, **seat orientation or responsibility** for another person on board the aircraft, the air operator shall ensure that the passenger is given an individual safety briefing that
(amended 2009/05/28)

(a) is appropriate to the passenger's needs; and

(b) meets the *Commercial Air Service Standards*.

(4) An air operator shall ensure that, in the event of an emergency and where time and circumstances permit, all passengers are given an emergency briefing in accordance with the *Commercial Air Service Standards*.

(5) An air operator shall ensure that each passenger who is seated next to a window emergency exit is informed by a crew member that the window is an emergency exit and is made aware of how to operate that exit.

Safety Features Card and Supplemental Briefing Card

(amended 2009/05/28)

705.44(1) An air operator shall provide each passenger, at the passenger's seat, with a safety features card containing, in pictographic form, the information required for a safety features card by section 725.44 of Standard 725 — *Airline Operations — Aeroplanes* of the *Commercial Air Service Standards*, and any wording shall be in English and French.
(amended 2009/05/28)

(2) An air operator shall ensure that
(amended 2009/05/28)

(a) the information required for a supplemental briefing card by section 725.44 of Standard 725 — *Airline Operations — Aeroplanes* of the *Commercial Air Service Standards* is available to passengers in the following four formats:

(i) English text in 14-point or larger sans-serif type with dark characters on a light background,

(ii) French text in 14-point or larger sans-serif type with dark characters on a light background,

(iii) English braille as defined and set out in the publication entitled *English Braille, American Edition, 1994*, published in 1994 or later by the Braille Authority of North America, and

(iv) French braille as set out in the *Code braille français uniformisé pour la transcription des textes imprimés* (CBFU), Quebec Edition (2008); and

(b) two copies in each format are on board every aircraft.

(3) The four formats may be displayed on one or more supplemental briefing cards.
(amended 2009/05/28)

Closing and Locking of Flight Deck Door

(amended 2002/03/21)

705.45 (1) Subject to subsection (2), after May 1, 2002, the pilot-in-command of an aeroplane that is equipped with a flight deck door shall ensure that all times from the moment the passenger entry doors are closed in preparation for departure until they are opened on arrival,
(amended 2002/03/21)

(a) in the case of an aeroplane referred to in subsection 705.80(1), the flight deck door is closed and locked using the locking device required by subsection 705.80(2); and
(amended 2003/04/09)

- (b) in the case of any other aeroplane,
 - (i) the flight deck door is closed, and
 - (ii) if the door is equipped with a locking device, it is locked.

(2) Subsection (1) does not apply when crew members or persons authorized in accordance with subsection 705.27(3) are required to enter or leave the flight deck
(amended 2002/03/21)

- (a) for the performance of their duties;
- (b) for physiological needs; or
- (c) for an overriding concern related to the safety of the flight.

(3) In all cases, persons entering or leaving the flight deck must comply with the procedures for opening, closing and locking flight deck doors set out in the company operations manual.
(amended 2002/03/21)

Night VFR Flight - Aeroplane (amended 2003/12/01)

705.46 No person shall operate an aeroplane in night VFR flight unless

- (a) the flight is conducted within 25 nautical miles of the departure aerodrome; or
- (b) in the case of an IFR flight, the pilot-in-command establishes visual contact with the intended aerodrome of landing and receives an authorization from the appropriate air traffic control unit or flight service station to conduct a visual approach.

Instrument Approach Procedures (amended 2006/12/01)

705.47 (1) No person shall conduct a CAT II or CAT III precision approach unless
(amended 2006/12/01)

- (a) the air operator is authorized to do so in its air operator certificate; and
- (b) the approach is conducted in accordance with the *Manual of All Weather Operations (Categories II and III)*.

(2) No person shall terminate an instrument approach with a landing unless, immediately prior to landing, the pilot-in-command ascertains, by means of radiocommunication or visual inspection,
(amended 2006/12/01)

- (a) the condition of the runway or surface of intended landing; and
- (b) the wind direction and speed.

***Approach Bans — Non-precision, APV and CAT I
Precision***

(amended 2006/12/01)

705.48 (1) For the purposes of subsections (2) to (4), the visibility with respect to an aeroplane is less than the minimum visibility required for a non-precision approach, an APV or a CAT I precision approach if, in respect of the advisory visibility specified in the *Canada Air Pilot* and set out in column I of an item in the table to this section,
(amended 2006/12/01)

(a) where the RVR is measured by RVR “A” and RVR “B”, the RVR measured by RVR “A” for the runway of intended approach is less than the visibility set out in column II of the item for the approach conducted;

(b) where the RVR is measured by only one of RVR “A” and RVR “B”, the RVR for the runway of intended approach is less than the visibility set out in column II of the item for the approach conducted;

(c) where no RVR for the runway of intended approach is available, the runway visibility is less than the visibility set out in column II of the item for the approach conducted; or

(d) where the aerodrome is located south of the 60th parallel of north latitude and no RVR or runway visibility for the runway of intended approach is available, the ground visibility at the aerodrome where the runway is located is less than the visibility set out in column II of the item for the approach conducted.

(2) No person shall continue a non-precision approach or an APV unless
(amended 2006/12/01)

(a) the air operator is authorized to do so in its air operator certificate;

(b) the aeroplane is equipped with

(i) if the flight crew does not use pilot-monitored-approach procedures, an autopilot capable of conducting a non-precision approach or an APV to 400 feet AGL or lower, or

(ii) a HUD capable of conducting a non-precision approach or an APV to 400 feet AGL or lower;

(c) the instrument approach procedure is conducted to straight-in minima; and

(d) a visibility report indicates that

(i) the visibility is equal to or greater than that set out in subsection (1),

(ii) the RVR is varying between distances less than and greater than the minimum RVR set out in subsection (1), or

(iii) the visibility is less than the minimum visibility set out in subsection (1) and, at the time the visibility report is received, the aeroplane has passed the FAF inbound or, where there is no FAF, the point where the final approach course is intercepted.

(3) No person shall continue an SCDA non-precision approach unless
(amended 2006/12/01)

(a) the air operator is authorized to do so in its air operator certificate;

(b) the aeroplane is equipped with

(i) if the flight crew does not use pilot-monitored-approach procedures, an autopilot capable of conducting a non-precision approach to 400 feet AGL or lower, or

(ii) a HUD capable of conducting a non-precision approach to 400 feet AGL or lower;

(c) the instrument approach procedure is conducted to straight-in minima with a final approach course that meets the requirements of section 725.48 of Standard 725 — *Airline Operations — Aeroplanes of the Commercial Air Service Standards*;

(d) the final approach segment is conducted using a stabilized descent with a planned constant descent angle specified in section 725.48 of Standard 725 — *Airline Operations — Aeroplanes of the Commercial Air Service Standards*; and

(e) a visibility report indicates that

(i) the visibility is equal to or greater than that set out in subsection (1),

(ii) the RVR is varying between distances less than and greater than the minimum RVR set out in subsection (1), or

(iii) the visibility is less than the minimum visibility set out in subsection (1) and, at the time the visibility report is received, the aeroplane has passed the FAF inbound or, where there is no FAF, the point where the final approach course is intercepted.

(4) No person shall continue a CAT I precision approach to a runway with centreline lighting or a CAT I precision approach in an aeroplane equipped with a HUD unless
(amended 2006/12/01)

(a) the air operator is authorized to do so in its air operator certificate;

(b) in the case of an aeroplane not equipped with a HUD,

(i) if the flight crew does not use pilot-monitored-approach procedures, the pilot-in-command and the second-in-command are qualified to conduct a CAT II precision approach,

(ii) the aeroplane is equipped with

(A) a flight director and autopilot capable of conducting a coupled precision approach to 200 feet AGL or lower, or

- (B) if the flight crew uses pilot-monitored-approach procedures, a flight director capable of conducting a precision approach to 200 feet AGL or lower, and
- (iii) the runway is equipped with serviceable high-intensity approach lighting, high-intensity runway centreline lighting and high-intensity runway edge lighting;
- (c) in the case of an aeroplane equipped with a HUD capable of conducting a precision approach to 200 feet AGL or lower,
- (i) the pilot-in-command and the second-in-command are qualified to conduct a CAT II precision approach,
- (ii) the aeroplane is equipped with a flight director and autopilot capable of conducting a coupled precision approach to 200 feet AGL or lower, and
- (iii) the runway is equipped with serviceable high-intensity approach lighting and high-intensity runway edge lighting; and
- (d) a visibility report indicates that
- (i) the visibility is equal to or greater than that set out in subsection (1),
- (ii) the RVR is varying between distances less than and greater than the minimum RVR set out in subsection (1), or
- (iii) the visibility is less than the minimum visibility set out in subsection (1) and, at the time the visibility report is received, the aeroplane has passed the FAF inbound or, where there is no FAF, the point where the final approach course is intercepted.

TABLE
APPROACH BANS — VISIBILITY

Item	Column I <i>Canada Air Pilot</i> Advisory Visibility		Column II Visibility Report	
	Statute miles	RVR in feet	Statute miles	Feet
1.	1/2	2 600	1/4	1 200
2.	3/4	4 000	3/8	2 000
3.	1	5 000	1/2	2 600
4.	1 1/4		5/8	3 400
5.	1 1/2		3/4	4 000
6.	1 3/4		1	5 000
7.	2		1	5 000
8.	2 1/4		1 1/4	6 000
9.	2 1/2		1 1/4	greater than 6 000
10.	2 3/4		1 1/2	greater than 6 000
11.	3		1 1/2	greater than 6 000

705.49 to 705.53 Reserved
(amended 2006/12/01)

DIVISION IV - AIRCRAFT PERFORMANCE OPERATING LIMITATIONS

Exceptions

705.54 A person may operate an aircraft without complying with the requirements of this Division if the person

- (a) is authorized to do so in an air operator certificate; and
- (b) complies with the *Commercial Air Service Standards*.

General Requirements

705.55 Any determination made for the purposes of sections 705.56 to 705.61 shall be based on approved performance data set out in the aircraft flight manual.

Take-off Weight Limitations

705.56 (1) No person shall conduct a take-off in an aircraft if the weight of the aircraft

(a) exceeds the maximum take-off weight specified in the aircraft flight manual for the pressure-altitude and the ambient temperature at the aerodrome where the take-off is to be made; or

(b) after allowing for planned fuel consumption during the flight to the destination aerodrome or alternate aerodrome, exceeds the landing weight specified in the aircraft flight manual for the pressure-altitude and the ambient temperature at the destination aerodrome or alternate aerodrome.

(2) In the determination of the maximum take-off weight referred to in subsection (1) for an aeroplane,

(a) the required accelerate-stop distance shall not exceed the accelerate-stop distance available (ASDA);

(b) the required take-off run shall not exceed the take-off run available (TORA); and

(c) the required take-off distance shall not exceed the take-off distance available (TODA).

(3) For the purposes of subsection (2), the following factors shall be taken into account:

(a) the pressure-altitude at the aerodrome;

(b) the ambient temperature;

- (c) the runway slope in the direction of take-off; and
- (d) not more than 50 per cent of the reported headwind component or not less than 150 per cent of the reported tailwind component.

Net Take-off Flight Path

705.57 (1) No person shall conduct a take-off in an aeroplane if the weight of the aeroplane is greater than the weight specified in the aircraft flight manual as allowing a net take-off flight path that clears all obstacles by at least 35 feet vertically or at least 200 feet horizontally within the aerodrome boundaries, and by at least 300 feet horizontally outside those boundaries.

(2) In the determination of the maximum weight, minimum distances and flight path referred to in subsection (1),

(a) corrections shall be made for

- (i) the runway to be used,
- (ii) the runway slope in the direction of take-off,
- (iii) the pressure-altitude at the aerodrome,
- (iv) the ambient temperature, and
- (v) the wind component at the time of take-off, where not more than 50 per cent of the reported headwind component or not less than 150 per cent of the reported tailwind component is considered; and

(b) calculations shall be based on the pilot

- (i) not banking the aeroplane before reaching an altitude of 50 feet,
- (ii) subject to subsection (3), using 15 degrees or less of bank at or below 400 feet, and
- (iii) using no more than 25 degrees of bank thereafter, aircraft speed and configuration permitting.

(3) A bank angle greater than the 15 degrees referred to in subparagraph (2)(b)(ii) may be used if it is authorized in an air operator certificate.

Enroute Limitations with One Engine Inoperative

705.58 (1) No person shall conduct a take-off in an aeroplane if the weight of the aeroplane is greater than the weight that will allow the aeroplane to attain, with any engine inoperative, a net flight path that

- (a) has a positive slope at 1,000 feet above all terrain and obstructions within five nautical miles on either side of the intended track, at all points along the route or planned diversion therefrom; or

(b) will permit flight from the cruising altitude to an aerodrome where the requirements of section 705.60 can be complied with, and clears vertically, by at least 2,000 feet, all terrain and obstructions within five nautical miles on either side of the intended track.

(2) For the purposes of subsection (1), the following factors shall be taken into account after an engine failure:

- (a) the effects of wind and temperature on the net flight path; and
- (b) the effects of fuel jettisoning, where the jettisoning is conducted in accordance with procedures set out in the company operations manual and sufficient fuel remains to complete a landing with the required fuel reserves.

Enroute Limitations with Two Engines Inoperative

705.59 (1) No person shall operate an aeroplane having three or more engines unless

- (a) all points along the intended track are located at a distance that can be flown in 90 minutes or less, with all engines operating at cruise power, from an aerodrome where the requirements of section 705.60 can be complied with; or
- (b) the weight of the aeroplane is not greater than the weight that, according to the two-engines-inoperative enroute net flight path data shown in the aircraft flight manual, will allow the aeroplane to clear vertically, by at least 2,000 feet, all terrain and obstructions within five nautical miles on either side of the intended track, and thereafter to continue flight to an aerodrome where the requirements of section 705.60 can be complied with.

(2) For the purposes of paragraph (1)(b), the following factors shall be taken into account after the failure of two engines:

- (a) the effects of wind and temperature on the net flight path; and
- (b) the effects of fuel jettisoning, where the jettisoning is conducted in accordance with procedures set out in the company operations manual and sufficient fuel remains to arrive at the destination aerodrome at 1,500 feet AGL with a fuel reserve sufficient to fly for 15 minutes thereafter at cruise power.

Dispatch Limitations: Landing at Destination and Alternate Aerodromes

705.60 (1) Subject to subsection (3), no person shall dispatch or conduct a take-off in an aeroplane unless

- (a) the weight of the aeroplane on landing at the destination aerodrome will allow a full-stop landing
 - (i) in the case of a turbo-jet-powered aeroplane, within 60 per cent of the landing distance available (LDA), or

(ii) in the case of a propeller-driven aeroplane, within 70 per cent of the landing distance available (LDA); and

(b) the weight of the aeroplane on landing at the alternate aerodrome will allow a full-stop landing

(i) in the case of a turbo-jet-powered aeroplane, within 60 per cent of the landing distance available (LDA), and

(ii) in the case of a propeller-driven aeroplane, within 70 per cent of the landing distance available (LDA).

(2) In determining whether an aeroplane can be dispatched or a take-off can be conducted in accordance with subsection (1), the following shall be taken into account:

(a) the pressure-altitude at the destination aerodrome and at the alternate aerodrome;

(b) not more than 50 per cent of the reported headwind component or not less than 150 per cent of the reported tailwind component; and

(c) that the aeroplane must be landed on a suitable runway, considering the wind speed and direction, the ground handling characteristics of the aeroplane, and other conditions such as landing aids and terrain.

(3) Where conditions at the destination aerodrome at the time of take-off do not permit compliance with paragraph (2)(c), an aeroplane may be dispatched and a take-off conducted if the alternate aerodrome designated in the operational flight plan permits, at the time of take-off, compliance with paragraph (1)(b) and subsection (2).

***Dispatch Limitations: Wet Runway -
Turbo-jet-powered Aeroplanes***

705.61 (1) Subject to subsection (2), when weather reports or forecasts indicate that the runway may be wet at the estimated time of arrival, no air operator shall dispatch or conduct a take-off in a turbo-jet-powered aeroplane unless the landing distance available (LDA) at the destination aerodrome is at least 115 per cent of the landing distance required pursuant to paragraph 705.60(1)(a).

(2) The landing distance available on a wet runway may be shorter than that required by subsection (1), but not shorter than that required by section 705.60, if the aircraft flight manual includes specific information about landing distances on wet runways.

705.62 to 705.66 Reserved

DIVISION V - AIRCRAFT EQUIPMENT REQUIREMENTS

General Requirements

705.67 No person shall operate an aircraft unless the aircraft is equipped with

- (a) two independent static pressure systems;
- (b) a windshield wiper or rain removal system for each pilot station;
- (c) heating or de-icing equipment for each carburetor or an alternate air source for each pressure carburetor or fuel injection system;
- (d) a placard on each door that provides passenger access to a passenger emergency exit, stating that the door must be secured or locked open during take-off and landing; and
- (e) a means for the crew, in an emergency, to unlock each door that leads to a compartment that is normally accessible to passengers and that can be locked by passengers.

Landing Lights

705.68 No person shall operate an aircraft at night unless the aircraft is equipped with at least two landing lights.

Operation of Aircraft in Icing Conditions

705.69 (1) When icing conditions are reported to exist or are forecast to be encountered along the route of flight, no person shall authorize a flight or its continuation or conduct a take-off or continue a flight in an aircraft, even if the pilot-in-command determines that the aircraft is adequately equipped to operate in icing conditions in accordance with paragraph 605.30(a), if, in the opinion of the pilot-in-command, the safety of the flight might be adversely affected.
(amended 2009/05/28)

(2) No person shall operate an aeroplane in icing conditions at night unless the aeroplane is equipped with a means to illuminate or otherwise detect the formation of ice.

Weather Radar Equipment

705.70 No person shall operate an aircraft with passengers on board in IMC when current weather reports or forecasts indicate that thunderstorms may reasonably be expected along the route to be flown, unless the aircraft is equipped with weather radar equipment.

Protective Breathing Equipment

705.71 (1) No air operator shall operate a pressurized aircraft unless, at each station listed in paragraph (3)(b), protective breathing equipment with a 15-minute supply of breathing gas at a pressure-altitude of 8,000 feet is provided in accordance with this section.

(2) The protective breathing equipment referred to in subsection (1) may be used to meet the crew member oxygen requirements specified in section 605.31.

(3) Protective breathing equipment shall be conveniently located and readily available

(a) with a fixed or portable breathing gas supply for use by each flight crew member on the flight deck; and

(b) with a portable breathing gas supply for use by crew members in combatting fires, as follows:

(i) one unit for use in each Class A, B and E cargo compartment that is accessible to crew members in the cabin during flight,

(ii) one unit for each hand-held fire extinguisher located in each isolated galley,

(iii) one unit on the flight deck,

(iv) one unit located within one metre of each hand-held fire extinguisher required in the passenger compartment by section 705.93, except if the Minister has authorized the location of protective breathing equipment more than one metre from each hand-held fire extinguisher where special circumstances exist that make compliance with this subparagraph impractical and that location provides an equivalent level of safety, and

(v) the number of units of protective breathing equipment used to satisfy the requirements of this paragraph shall not be less than the number of flight attendants required for the flight.

First Aid Oxygen

705.72 No air operator shall operate a pressurized aircraft with passengers on board unless the aircraft is equipped with oxygen dispensing units and an undiluted supply of first aid oxygen sufficient to provide two per cent of the occupants, and in any case at least one person, with oxygen for one hour or the entire duration of the flight at a cabin pressure-altitude above 8,000 feet, after an emergency descent following cabin depressurization, whichever period is longer.

Interphone System

705.73 No person shall operate an aircraft unless the aircraft is equipped with an interphone system that can be operated independently of the public address system required by section 705.74, except for handsets, headsets, microphones, selector switches and signalling devices.

Public Address System

705.74 No person shall operate an aircraft with passengers on board unless the aircraft is equipped with a public address system that can be operated independently of the interphone system required by section 705.73, except for handsets, headsets, microphones, selector switches and signalling devices.

Crew Member Shoulder Harnesses

705.75 (1) Subject to subsection (2), no person shall operate an aircraft unless all pilot seats and seats for each flight attendant required pursuant to section 705.104 are equipped with a safety belt that includes dual upper torso straps with a single-point release.

(2) Seats for each flight attendant required pursuant to section 705.104 on the HS 748 and on any aeroplane for which an initial type approval was issued before January 1, 1958 need not be equipped as specified in subsection (1) until June 1, 2000.

Lavatory Fire Protection

705.76 No person shall operate an aircraft unless

(a) each lavatory in the aircraft is equipped with a smoke detector system or equivalent that provides

(i) a warning light in the cockpit, or

(ii) a warning light or audible warning in the passenger compartment that can be readily detected by a flight attendant, taking into consideration the positioning of flight attendants throughout the passenger compartment during the flight;

(b) each lavatory in the aircraft is equipped with a built-in fire extinguisher for each waste disposal receptacle that is installed in the lavatory, and each extinguisher is designed to discharge automatically into the disposal receptacle on the occurrence of a fire in that receptacle;

(c) a readily visible sign that clearly displays a symbol indicating that smoking is prohibited or the words "No Smoking" and "Défense de fumer" is installed above the door handle on both sides of the door to each lavatory in the aircraft;

(d) a readily visible sign that clearly displays a symbol indicating that cigarette disposal is prohibited or the words "No Cigarette Disposal" and "Défense de jeter des cigarettes" is installed adjacent to the opening of each waste disposal receptacle that is located in a lavatory in the aircraft; and

(e) a self-contained, removable ashtray is installed on or near the outside of the door to each lavatory in the aircraft or in some other location or locations where it is readily visible to the users of each lavatory from outside the lavatory.

***Flammability Requirements for Aeroplane Seat
Cushions***

705.77 No person shall operate an aeroplane for which an initial type certificate was issued after January 1, 1958 unless all passenger compartment seat cushions meet the standards respecting the fire protection of seat cushions set out in Chapter 525 of the *Airworthiness Manual*.

Floor Proximity Emergency Escape Path Markings

705.78 No person shall operate, with passengers on board, an aeroplane for which an initial type certificate was issued after January 1, 1958 unless the aeroplane is provided with floor proximity emergency escape path markings that meet the standards set out in Chapter 525 of the *Airworthiness Manual*.

Flashlight Stowage

705.79 No person shall operate an aircraft unless it is equipped with flashlight stowage provisions that are accessible from each required flight attendant seat.

Doors and Locks

(amended 2002/03/21)

705.80 (1) Subject to subsections (3) and (4), no person shall operate an aeroplane in respect of which an initial type certificate was issued after January 1, 1958 unless the aeroplane is equipped with
(amended 2003/04/09)

(a) in the case of a passenger-carrying aeroplane,

(i) a door between the flight deck and the passenger compartment, and

(ii) if the aeroplane is equipped with a crew rest facility having an entry from the flight deck and a separate entry from the passenger compartment, a door between the crew rest facility and the passenger compartment; and

(b) in the case of an all-cargo aeroplane that was equipped with a flight deck door on January 15, 2002,

(i) a door between the flight deck and a compartment occupied by a person, and

(ii) if the aeroplane is equipped with a crew rest facility having an entry from the flight deck and a separate entry from a compartment occupied by a person, a door between the crew rest facility and the compartment.

(2) The doors required by subsection (1) shall be equipped with a locking device that can be unlocked only from inside the flight deck or the crew rest facility, as the case may be.
(amended 2003/04/09)

(3) A key shall be readily available to each crew member for each door that separates a passenger compartment or a compartment occupied by a person from an emergency exit, with the exception of a door required by subsection (1).

(amended 2003/04/09)

(4) No crew member, except a flight crew member, shall have a key to a door required by subsection (1) at any time from the moment the passenger entry doors are closed in preparation for departure until they are opened on arrival unless the locking device required by subsection (2) is installed and locked.

(amended 2003/04/09)

(5) No person shall operate an aeroplane that is required by subsection (1) to be equipped with a door unless

(amended 2003/04/09)

(a) each door meets the design requirements of section 525.795 of the *Airworthiness Manual* in effect on May 1, 2002; and

(b) the locking device required by subsection (2) and any other system used to control access to the flight deck can be operated from each flight crew member position.

(amended 2003/04/09)

Cargo and Baggage Compartment Fire Protection

(amended 2003/12/01)

705.81 After June 1, 2004, no person shall operate a transport category aeroplane in respect of which an initial type certificate was issued after January 1, 1958 unless each cargo or baggage compartment of the aeroplane meets the requirements set out in section 725.81 of Standard 725 - *Airline Operations - Aeroplanes* of the *Commercial Air Services Standards*.

Pitot Heat Indication System

(amended 2007/06/30)

705.82 After June 30, 2008, no person shall conduct a take-off in a transport category aeroplane, or in a non-transport category aeroplane in respect of which a type certificate was issued after December 31, 1964, that is equipped with a flight instrument Pitot heating system unless the aeroplane is also equipped with a Pitot heat indication system that meets the requirements of section 525.1326 of Chapter 525 — *Transport Category Aeroplanes* of the *Airworthiness Manual*.

ACAS

(amended 2007/07/01)

705.83 (1) Subject to subsection (4), no air operator shall operate a turbine-powered aeroplane in airspace outside RVSM airspace unless the aeroplane is equipped with an operative ACAS that
(amended 2007/07/01)

(a) meets the requirements of **CAN-TSO-C119a** or a more recent version of it or other requirements that the Minister has accepted as providing a level of safety that is at least equivalent to the level that that **CAN-TSO** provides; and
(amended 2009/12/01)

(b) is equipped with a Mode S transponder that meets the requirements of **CAN-TSO-C112** or a more recent version of it.
(amended 2009/12/01)

(2) Subject to subsection (4), no air operator shall operate an aeroplane that is not a turbine-powered aeroplane in airspace outside RVSM airspace unless the aeroplane is equipped with an operative ACAS that
(amended 2007/07/01)

(a) meets the requirements of **CAN-TSO-C118** or a more recent version of it or other requirements that the Minister has accepted as providing a level of safety that is at least equivalent to the level that that **CAN-TSO** provides; or
(amended 2009/12/01)

(b) meets the requirements of **CAN-TSO-C119a** or a more recent version of it or other requirements that the Minister has accepted as providing a level of safety that is at least equivalent to the level that that **CAN-TSO** provides and is equipped with a Mode S transponder that meets the requirements of **CAN-TSO-C112** or a more recent version of it.
(amended 2009/12/01)

(3) Subject to subsection (4), no air operator shall operate an aeroplane referred to in subsection (1) or (2) in RVSM airspace unless the aeroplane is equipped with an operative ACAS that
(amended 2007/07/01)

(a) meets the requirements of **CAN-TSO-C119b** or a more recent version of it or other requirements that the Minister has accepted as providing a level of safety that is at least equivalent to the level that that **CAN-TSO** provides; and
(amended 2009/12/01)

(b) is equipped with a Mode S transponder that meets the requirements of **CAN-TSO-C112** or a more recent version of it.
(amended 2009/12/01)

(4) The air operator may operate the aeroplane without its being equipped with an operative ACAS if

(amended 2007/07/01)

(a) where a minimum equipment list has not been approved by the Minister and subject to subsection 605.08(1), the operation takes place within the three days after the date of failure of the ACAS; or

(b) it is necessary for the pilot-in-command to deactivate, in the interests of aviation safety, the ACAS or any of its modes and the pilot-in-command does so in accordance with the aircraft flight manual, aircraft operating manual, flight manual supplement or minimum equipment list.

(5) This section does not apply in respect of aeroplanes manufactured on or before the day on which this section comes into force until two years after that day.

(amended 2007/07/01)

705.84 to 705.88 Reserved

(amended 2007/07/01)

DIVISION VI - EMERGENCY EQUIPMENT

Megaphones

705.89 No person shall operate, with passengers on board, an aeroplane for which a type certificate has been issued authorizing the transport of 60 or more passengers, unless the following number of portable battery-powered megaphones are carried on board the aeroplane and are conveniently located and readily available for use by the flight attendants:

- (a) for each passenger deck, at least one megaphone;
- (b) 61 to 99 passenger seats, one megaphone; and
- (c) 100 or more passenger seats, two megaphones.

First Aid Kits

705.90 (1) No person shall operate an aircraft unless the following number of first aid kits that meet the *Commercial Air Service Standards* are carried on board the aircraft:

- (a) 0 to 50 passenger seats, one kit;
- (b) 51 to 150 passenger seats, two kits;
- (c) 151 to 250 passenger seats, three kits; and
- (d) 251 or more passenger seats, four kits.

(2) First aid kits shall be

(a) distributed throughout the aircraft cabin;

(b) readily available to crew members and passengers;

(c) clearly identified;

(d) marked with the date of the last inspection; and

(e) where the aircraft is equipped with only one first aid kit, located as close as practicable to an emergency exit.

(3) A stowage compartment that contains a first aid kit shall be clearly marked as to its contents.

Emergency Medical Kit

705.91 No person shall operate an aircraft that has a seating configuration, excluding crew seats, of more than 100 unless an emergency medical kit that meets the *Commercial Air Service Standards* is carried on board the aircraft.

Crash Axe

705.92 No person shall operate an aircraft unless a crash axe is carried on board the aircraft.

Hand-held Fire Extinguishers

705.93 (1) No person shall operate an aircraft unless hand-held fire extinguishers for use in the flight deck, passenger compartment and cargo compartment are carried on board the aircraft.

(2) The type and quantity of extinguishing agent shall be suitable for extinguishing fires that are likely to occur in the flight deck, passenger compartment or cargo compartment where the extinguisher is intended to be used and, in the case of the extinguishing agent for extinguishers intended to be used in the passenger compartment, shall be designed to minimize the hazard of toxic gas concentrations.

(3) At least one hand-held fire extinguisher shall be conveniently located and readily available for immediate use in each class E cargo compartment that is accessible to crew members during flight, and at least one hand-held fire extinguisher shall be located in each isolated galley.

(4) At least one hand-held fire extinguisher shall be conveniently located on the flight deck and readily available for immediate use by the flight crew members.

(5) The following number of hand-held fire extinguishers shall be conveniently located, readily available for immediate use and uniformly distributed throughout the passenger compartment on each deck:

(a) 60 or fewer passenger seats, two extinguishers;

(b) 61 to 200 passenger seats, three extinguishers;

(c) 201 or more passenger seats, one extra extinguisher for each additional unit of 100 passenger seats.

(6) At least two hand-held fire extinguishers shall contain Halon 1211 (bromochlorodifluoromethane) or its equivalent.

(7) A stowage compartment or stowage container that contains a hand-held fire extinguisher shall be clearly marked as to its contents.

Portable Oxygen

705.94 No person shall operate a pressurized aircraft above FL 250 unless

(a) there is readily available to each flight attendant on board portable oxygen equipment with a 15-minute supply of oxygen; or

(b) sufficient portable oxygen units with masks, or spare outlets and masks, to ensure an immediate supply of oxygen to each flight attendant are distributed throughout the cabin.

Survival Equipment

705.95 No air operator shall operate an aircraft unless the equipment carried on board the aircraft pursuant to sections 602.61 and 602.63 meets the additional requirements of the *Commercial Air Service Standards*.

Inspection Requirements

705.96 No air operator shall operate an aircraft unless the emergency equipment carried on board pursuant to this Division is inspected regularly in accordance with the inspection schedule set out in the company operations manual.

Flashlights

705.97 Each flight attendant required pursuant to section 705.104 shall have a flashlight readily available for use.

705.98 to 705.102 Reserved

DIVISION VII - PERSONNEL REQUIREMENTS

Designation of Pilot-in-command and Second-in-command

705.103 An air operator shall designate for each flight a pilot-in-command and a second-in-command.

Flight Attendant Requirements

705.104 (1) Subject to subsection (3), no air operator shall operate an aircraft with passengers on board unless the crew includes at least the following number of flight attendants:

- (a) 1 to 40 passengers on board, one attendant;
- (b) 41 to 80 passengers on board, two attendants; and
- (c) 81 or more passengers on board, one attendant for each unit of 40 passengers or portion thereof.

(2) Notwithstanding subsection (1), no air operator shall operate an aircraft with passengers on board with fewer flight attendants than the number required to satisfy the following requirements:

(a) the air operator shall, for each type and model of aircraft that it operates, assign to each flight attendant the duties to be performed in an emergency, including an emergency evacuation, and shall show that the performance of those duties adequately meets any emergency that may be reasonably anticipated, including the possible incapacitation of another flight attendant; and

(b) the air operator shall ensure that the duties assigned pursuant to paragraph (a) are described in its company operations manual.

(3) An air operator may operate an aircraft with passengers on board with a crew that includes fewer than the minimum number of flight attendants required by subsection (1), if the air operator

- (a) is authorized to do so in its air operator certificate; and
- (b) complies with the *Commercial Air Service Standards*.

(4) Where an aircraft has more than one deck, the number of flight attendants on each deck shall be in accordance with subsections (1) and (2).

Designation of In-charge Flight Attendant

705.105 An air operator shall, where a crew includes more than one flight attendant, designate an in-charge flight attendant.

Pilot Qualifications

705.106 (1) Subject to subsection (3), no air operator shall permit a person to act and no person shall act as the pilot-in-command, second-in-command or cruise relief pilot of an aircraft unless the person

- (a) holds the licence, ratings and endorsements required by Part IV;
- (b) within the previous 90 days,
 - (i) has completed at least three take-offs and three landings as the pilot at the controls and one sector assigned to duty as a flight crew member in an aircraft of that type,
 - (ii) has completed five sectors assigned to duty as a flight crew member in an aircraft of that type, or
 - (iii) has fulfilled the training requirements set out in the *Commercial Air Service Standards*;
- (c) has successfully completed a pilot proficiency check, the validity period of which has not expired, for that type of aircraft, in accordance with the *Commercial Air Service Standards*;
- (d) has successfully completed or is undergoing a line check or line indoctrination training, the validity period of which has not expired, for that type of aircraft, in accordance with the *Commercial Air Service Standards*; and
- (e) has fulfilled the requirements of the air operator's training program.

(2) A pilot who does not meet the requirements of subparagraph (1)(b)(i) or (ii) shall regain competency in accordance with the *Commercial Air Service Standards*.

(3) An air operator may permit a person to act and a person may act as the pilot-in-command or second-in-command of an aircraft where the person does not meet the requirements of subsection (1), if

- (a) the aircraft is operated on a training, ferry or positioning flight; or
- (b) the air operator
 - (i) is authorized to do so in its air operator certificate, and
 - (ii) complies with the *Commercial Air Service Standards*.

(4) A pilot shall, on successful completion of a pilot proficiency check, meet the requirements of the consolidation period in accordance with the *Commercial Air Service Standards*.

Flight Engineer and Second Officer Qualifications

705.107 (1) Subject to subsection (2), no air operator shall permit a person to act and no person shall act as a flight engineer or a second officer on board an aircraft unless

- (a) the person holds the licence and endorsements required by Part IV;
- (b) the air operator has determined, by means of a check in flight or in a flight simulator that has been approved by the Minister under Subpart 6 of Part VI, that the person meets the *Commercial Air Service Standards* for that type of aircraft, or the person has, within the previous six months, completed at least 50 hours of flight time as a flight engineer on an aircraft of that type;
- (c) the person has successfully completed or is undergoing line indoctrination training for that type of aircraft, in accordance with the *Commercial Air Service Standards*; and
- (d) the person has fulfilled the requirements of the air operator's training program.

(2) A person who is qualified to act as a pilot-in-command or a second-in-command in accordance with section 705.106 may act as a second officer on board an aircraft during the cruise portion of a flight, if

- (a) the person has received initial and annual recurrent training in normal and emergency procedures pertaining to the cruise portion of the flight, in accordance with the *Commercial Air Service Standards*; and
- (b) the air operator has determined, by means of a check, that the person meets the *Commercial Air Service Standards* for that type of aircraft.

Crew Pairing

705.108 No air operator shall assign a pilot-in-command and a second-in-command to an aircraft unless their combined experience on that type of aircraft meets the *Commercial Air Service Standards*.

Flight Attendant Qualifications

705.109 (1) No air operator shall permit a person to act and no person shall act as a flight attendant on board an aircraft unless the person

- (a) has successfully completed the air operator's training program, except that a person may act as a flight attendant while undergoing line indoctrination training if the person is carried in addition to the number of flight attendants required by section 705.104 and is under the supervision of a flight attendant; and
- (b) has successfully completed line indoctrination training within 90 days after completing the air operator's training program or has regained competency in accordance with the Flight Attendant Training Standard.

(2) A person who has not completed line indoctrination training within the period specified in paragraph (1)(b) shall requalify in accordance with the Flight Attendant Training Standard.

Flight Dispatcher Qualifications

705.110 (1) No air operator shall permit a person to act and no person shall act as a flight dispatcher unless the person has fulfilled the requirements of the air operator's training program and, after June 1, 1998, holds a flight dispatcher certificate.

(2) An air operator shall notify the Minister whenever a flight dispatcher certificate is issued or becomes invalid.

Route and Aerodrome Qualifications

705.111 No air operator shall permit a person to act and no person shall act as the pilot-in-command of an aircraft on a flight along a route or into an aerodrome unless

- (a) within the previous 12 months, the person has acted as a flight crew member or has been on the flight deck as an observer on a flight along that route and into that aerodrome; or
- (b) the person has received training and demonstrated adequate knowledge, in accordance with the *Commercial Air Service Standards*.

Check Authority

705.112 (1) A pilot proficiency check shall be conducted by the Minister.

(2) Any other check required under this Subpart may be conducted by the Minister.

Validity Period

705.113 (1) Subject to subsections (4) and (5), the validity period of a line check and of the training referred to in section 705.124 expires on the first day of the thirteenth month following the month in which the check or training was completed.

(2) Subject to subsections (4) and (5), the validity period of a pilot proficiency check expires

- (a) on the first day of the seventh month following the month in which the check was completed;
- (b) on the first day of the thirteenth month following the month in which the check was completed, where the pilot successfully completes the six-month recurrency training that has been approved by the Minister, in accordance with the *Commercial Air Service Standards*, as a substitute for the pilot proficiency check and that is identified in the company operations manual; or

(c) at the end of the validation period, where the air operator has an operations specification authorizing an advanced qualification program in accordance with the *Commercial Air Service Standards* and the pilot completes a proficiency evaluation within the evaluation period authorized for the air operator in the operations specification.

(3) The validity period of a flight dispatcher competency check expires on the first day of the thirteenth month following the month in which the check was completed.

(4) Where a pilot proficiency check, a flight dispatcher competency check, a line check or training is renewed within the last 90 days of its validity period, its validity period is extended by six or 12 months, as appropriate.

(5) The Minister may extend the validity period of a pilot proficiency check, a flight dispatcher competency check, a line check or any training by up to 60 days where the Minister is of the opinion that aviation safety is not likely to be affected.

(6) Subject to subsection (7), where the validity period of a pilot proficiency check, a line check, or annual or semi-annual training has been expired for 24 months or more, the person shall requalify by meeting the training requirements specified in the *Commercial Air Service Standards*.

(7) Where the validity period of a flight dispatcher competency check or annual training has been expired for 12 months or more, the person shall requalify by meeting the training requirements specified in the *Commercial Air Service Standards*.

705.114 to 705.123 Reserved

DIVISION VIII - TRAINING

Training Program

705.124 (1) Every air operator shall establish and maintain a training program that is

(a) designed to ensure that each person who receives training acquires the competence to perform the person's assigned duties; and

(b) approved by the Minister in accordance with the *Commercial Air Service Standards* and, in respect of flight attendants, in accordance with the *Commercial Air Service Standards* and the Flight Attendant Training Standard.

(2) An air operator's training program shall include

(a) for flight crew members:

(i) company indoctrination training,

(ii) line indoctrination training,

(iii) upgrading training, where applicable, and

- (iv) initial and annual training, including
 - (A) aircraft type training,
 - (B) aircraft servicing and ground handling training,
 - (C) emergency procedures training, and
 - (D) aircraft surface contamination training;
 - (b) for flight attendants:
 - (i) aviation indoctrination,
 - (ii) line indoctrination training,
 - (iii) in-charge training, where applicable, and
 - (iv) initial and annual training, including
 - (A) safety procedures training,
 - (B) aircraft type training,
 - (C) emergency procedures training,
 - (D) aircraft surface contamination training, and
 - (E) first aid training;
 - (c) for flight dispatchers:
 - (i) initial and annual aircraft type training,
 - (ii) on-the-job training, and
 - (iii) aircraft cockpit familiarization training;
 - (d) initial and annual aircraft surface contamination training for those operations personnel designated in the *Commercial Air Service Standards*; and
 - (e) any other training required to ensure a safe operation under this Subpart.
- (3) An air operator shall
- (a) include a detailed syllabus of its training program in its company operations manual;
 - (b) ensure that adequate facilities and qualified personnel are provided for its training program, in accordance with the *Commercial Air Service Standards*; and
 - (c) establish and maintain a safety awareness program concerning the adverse effects of aircraft surface contamination and provide the program to all flight operations personnel who are not required to undergo the training described in paragraph (2)(d).

Conditional Approval of Training Program

705.125 (1) The Minister may give conditional approval to a training program where an air operator submits to the Minister a copy of a syllabus of its training program that provides enough information for a preliminary evaluation of the training program in light of the *Commercial Air Service Standards*.

(2) An air operator may conduct training under a training program that has received conditional approval until the Minister has evaluated the effectiveness of the training program and has informed the air operator of any deficiencies that must be corrected.

(3) The Minister shall give final approval to a conditionally approved training program when the air operator demonstrates that the training conducted under that program is adequate to permit the persons who receive it to safely perform their assigned duties and when any identified deficiencies have been corrected.

Cabin Emergency Evacuation Trainer

705.126 An air operator may conduct emergency training and testing on a cabin emergency evacuation trainer, rather than on an aircraft, if the trainer has been approved by the Minister in accordance with the *Commercial Air Service Standards*.

Training and Qualification Records

705.127 (1) Every air operator shall, for each person who is required to receive training under this Subpart, establish and maintain a record of

- (a) the person's name and, where applicable, personnel licence number, type and ratings;
- (b) if applicable, the person's medical category and the expiry date of that category;
- (c) the dates on which the person, while in the air operator's employ, successfully completed any training, pilot proficiency check or examination required under this Subpart or obtained any qualification required under this Subpart;
- (d) information relating to any failure of the person, while in the air operator's employ, to successfully complete any training, pilot proficiency check or examination required under this Subpart or to obtain any qualification required under this Subpart; and
- (e) the type of aircraft or flight training equipment used for any training, pilot proficiency check, line check or qualification required under this Subpart.

(2) An air operator shall retain the records referred to in paragraphs (1)(c) and (d) and a record of each pilot proficiency check for at least three years.

(3) An air operator shall keep a master copy of each examination on file and make it available for review by the Minister for a period of not less than three years.
(amended 2009/05/28)

705.128 to 705.133 Reserved

DIVISION IX - MANUALS

Requirements Relating to Company Operations Manual

705.134 (1) Every air operator shall establish and maintain a company operations manual that meets the requirements of section 705.135.

(2) An air operator shall submit its company operations manual, and any amendments to that manual, to the Minister.

(3) Where there is a change in any aspect of an air operator's operation or where the company operations manual no longer meets the *Commercial Air Service Standards*, the air operator shall amend its company operations manual.

(4) The Minister shall, where the *Commercial Air Service Standards* are met, approve those parts of a company operations manual, and any amendments to those parts, that relate to the information required by section 705.135.

Contents of Company Operations Manual

705.135 (1) A company operations manual, which may be issued in separate parts corresponding to specific aspects of an operation, shall include the instructions and information necessary to enable the personnel concerned to perform their duties safely and shall contain the information required by the *Commercial Air Service Standards*.

(2) A company operations manual shall be such that

(a) all parts of the manual are consistent and compatible in form and content;

(b) the manual can be readily amended;

(c) the manual contains an amendment control page and a list of the pages that are in effect; and

(d) the manual has the date of the last amendment to each page specified on that page.

Distribution of Company Operations Manual

705.136 (1) Subject to subsection (2), an air operator shall provide a copy of the appropriate parts of its company operations manual, including any amendments to those parts, to each of its crew members and to its ground operations and maintenance personnel.

(2) An air operator may place a copy of the appropriate parts of its company operations manual in each aircraft that it operates, instead of providing a copy to each crew member, if all amendments to the manual are included in the system for the dissemination of general operational information referred to in section 705.18.

(3) Every person who has been provided with a copy of the appropriate parts of a company operations manual pursuant to subsection (1) shall keep it up to date with the amendments provided and shall ensure that the appropriate parts are accessible when the person is performing assigned duties.

Aircraft Operating Manual

705.137 (1) An air operator may establish and maintain an aircraft operating manual for the use and guidance of crew members in the operation of its aircraft.

(2) An aircraft operating manual shall contain

(a) the aircraft operating procedures; and

(b) where the aircraft flight manual is not carried on board the aircraft, the aircraft performance data and limitations specified in the aircraft flight manual, which shall be clearly identified as aircraft flight manual requirements.

(3) An air operator that has established an aircraft operating manual shall submit a copy of the manual, and any amendments to that manual, to the Minister for approval.

(4) The Minister shall approve an aircraft operating manual, and any amendments to that manual, where the *Commercial Air Service Standards* are met.

(5) An air operator that has established an aircraft operating manual shall ensure that a copy of the manual is carried on board each aircraft to which it relates.

Standard Operating Procedures

705.138 (1) Every air operator shall, for each of its aircraft, establish and maintain standard operating procedures that enable the crew members to operate the aircraft within the limitations specified in the aircraft flight manual, and that meet the *Commercial Air Service Standards*.

(2) An air operator shall submit a copy of its aircraft standard operating procedures, and any amendments to those procedures, to the Minister.

(3) An air operator shall ensure that a copy of the standard operating procedures for an aircraft is carried on board the aircraft.

(4) Where an air operator has established an aircraft operating manual, the standard operating procedures for the aircraft shall form part of that manual.

Flight Attendant Manual

705.139 (1) Every air operator, other than an air operator that is authorized solely for the transport of cargo in its air operator certificate, shall establish and maintain, as part of its company operations manual, a flight attendant manual for the use and guidance of flight attendants in the operation of its aircraft.

(2) A flight attendant manual shall contain the instructions and information necessary to enable flight attendants to perform their duties safely and shall contain the information required by the Flight Attendant Manual Standard.

(3) The Minister shall, where the Flight Attendant Manual Standard is met, approve those parts of a flight attendant manual, and any amendments to those parts, that relate to the safety and emergency information contained in Part A of the Flight Attendant Manual Standard.

(4) An air operator shall provide a copy of its flight attendant manual, including any amendments to that manual, to each of its flight attendants.

(5) Every flight attendant who has been provided with a copy of a flight attendant manual pursuant to subsection (4) shall keep it up to date with the amendments provided and shall ensure that the appropriate parts are accessible when the flight attendant is performing assigned duties on board an aircraft.

705.140 to 705.150 Reserved
(amended 2005/05/31)

DIVISION X - SAFETY MANAGEMENT SYSTEM

(amended 2005/05/31)

Requirements

705.151 The safety management system required under section 107.02 in respect of an applicant for, or a holder of, an air operator certificate shall
(amended 2005/05/31)

- (a) meet the requirements of Subpart 7 of Part I and section 705.152;
- (b) be under the control of the operations manager appointed under paragraph 700.09(1)(a);
and
- (c) cover the maintenance control activities undertaken under Subpart 6.

Components of the Safety Management System

705.152(1) The safety management system shall include, among others, the following components:

(amended 2005/05/31)

- (a) a safety management plan that includes
 - (i) a safety policy that the accountable executive has approved and communicated to all employees,
 - (ii) the roles and responsibilities of personnel assigned duties under the quality assurance program established under section 706.07 or the safety management system,
 - (iii) performance goals and a means of measuring the attainment of those goals,
 - (iv) a policy for the internal reporting of a hazard, an incident or an accident, including the conditions under which immunity from disciplinary action will be granted, and
 - (v) a review of the safety management system to determine its effectiveness;
- (b) procedures for reporting a hazard, an incident or an accident to the appropriate manager;
- (c) procedures for the collection of data relating to hazards, incidents and accidents;
- (d) procedures for analysing data obtained under paragraph (c) and during an audit conducted under subsection 706.07(3) and for taking corrective actions;
- (e) an audit system referred to in subsection 706.07(3);
- (f) training requirements for the operations manager, the maintenance manager and personnel assigned duties under the safety management system; and
- (g) procedures for making progress reports to the accountable executive at intervals determined by the accountable executive and other reports as needed in urgent cases.

(2) The components specified in subsection (1) shall be set out in the air operator's company operations manual and maintenance control manual (MCM).

Person Managing the Safety Management System

705.153 The person managing the safety management system shall
(amended 2005/05/31)

- (a) establish and maintain a reporting system to ensure the timely collection of information related to hazards, incidents and accidents that may adversely affect safety;
- (b) identify hazards and carry out risk management analyses of those hazards;
- (c) investigate, analyze and identify the cause or probable cause of all hazards, incidents and accidents identified under the safety management system;

- (d) establish and maintain a safety data system, either by electronic or by other means, to monitor and analyze trends in hazards, incidents and accidents;
- (e) monitor and evaluate the results of corrective actions with respect to hazards, incidents and accidents;
- (f) monitor the concerns of the civil aviation industry in respect of safety and their perceived effect on the air operator;
- (g) determine the adequacy of the training required by paragraph 705.152(1)(f); and
- (h) where the operations manager has assigned the management functions for the safety management system under subsection 705.03(3) to another person, report to the operations manager the hazards, incidents and accidents identified under the safety management system or as a result of an audit required under subsection 706.07(3).

Holder of More Than One Certificate

705.154 The holder of an air operator certificate issued under section 705.07 who is also the holder of an approved maintenance organization (AMO) certificate issued under section 573.02, shall adhere to the requirements referred to in section 573.30 with respect to a safety management system when undertaking maintenance control activities under Subpart 6. (amended 2005/05/31)

[705.155 to 705.170 reserved]
(amended 2009/06/10)

DIVISION XI — INTERFERENCE WITH A CREW MEMBER

(amended 2009/06/10)

Interpretation
(amended 2009/06/10)

705.171 In this Division,
(amended 2009/06/10)

“interference with a crew member” means any action or statement set out in the levels listed in section 705.175 by a person on board or about to board an aircraft that distracts or prevents a crew member from the performance of their assigned safety responsibilities: (*entrave au travail d'un membre d'équipage*)

“operational personnel” means an air operator’s employees whose duties require that they interact directly with persons on board or about to board an aircraft, and includes crew members, gate and check-in staff and their immediate supervisors. (*personnel d'exploitation*)

Preventing and Managing Incidents of Interference with a Crew Member

(amended 2009/06/10)

705.172(1) An air operator shall establish procedures to prevent and manage incidents of interference with a crew member covering the topics set out in section 725.172 of Standard 725 — *Airline Operations — Aeroplanes* of the *Commercial Air Service Standards*.
(amended 2009/06/10)

(2) An air operator shall specify in the company operations manual and in their flight attendant manual the procedures established in accordance with subsection (1).
(amended 2009/06/10)

Training

(amended 2010/06/10)

705.173 An air operator shall provide initial and annual training to all operational personnel that covers the topics set out in subsection 725.124(54) of Standard 725 — *Airline Operations — Aeroplanes* of the *Commercial Air Service Standards* for the purpose of enabling
(amended 2010/06/10)

(a) the recognition, prevention and management of behaviour that could reasonably be expected to lead to an incident of interference with a crew member;

(b) the recognition, prevention and management of incidents of interference with a crew member; and

(c) the knowledge of post-flight procedures related to incidents of interference with a crew member.

Reporting Incidents of Interference with a Crew***Member***

(amended 2009/06/10)

705.174 (1) An air operator shall establish procedures to ensure that level 2, level 3 and level 4 incidents of interference with a crew member are reported to the air operator and to allow for the reporting of a level 1 incident.
(amended 2009/06/10)

(2) An air operator shall specify in the company operations manual and in their flight attendant manual the procedures established under subsection (1).
(amended 2009/06/10)

(3) A report of an incident of interference with a crew member shall contain the information set out in section 725.174 of Standard 725 — *Airline Operations — Aeroplanes* of the *Commercial Air Service Standards*.
(amended 2009/06/10)

(4) An air operator shall ensure that reports are retained for a period of three years after the date of the incident and are made available to the Minister on request.
(amended 2009/06/10)

(5) An air operator shall submit to the Minister statistics relating to incidents of interference with a crew member, the content of which is set out in section 725.174 of Standard 725 — *Airline Operations — Aeroplanes of the Commercial Air Service Standards*, every six months.
(amended 2009/06/10)

Levels of Interference with a Crew Member

(amended 2009/06/10)

705.175 The levels of interference with a crew member are as follows:
(amended 2009/06/10)

(a) a level 1 incident, which is an incident of a minor nature that either requires no action of the crew member beyond heightened awareness or is effectively and quickly resolved by a crew member and which includes but is not limited to

(i) the use of unacceptable language towards a crew member,

(ii) unacceptable behaviour towards a crew member, and

(iii) a display of suspicious behaviour;

(b) a level 2 incident, which is an incident of a moderate nature that is resolved by a crew member only after some difficulty and which includes but is not limited to

(i) the repetition of a level 1 incident;

(ii) the continuation of a level 1 incident by a passenger after being warned by a crew member;

(iii) the repeated failure of a passenger to comply with a crew member's safety instructions, and

(iv) belligerent, obscene or lewd behaviour towards a crew member;

(c) a level 3 incident, which is an incident where there are serious safety concerns for passengers or crew members and which includes but is not limited to

(i) threatening a person on board or about to board the aircraft or making threats in an attempt to board the aircraft;

(ii) the continuation of a level 2 incident that was unresolved;

(iii) tampering with any emergency or safety equipment on board the aircraft;

(iv) deliberate damage of any part of the aircraft or any property on board the aircraft;

(v) injuring a person on board the aircraft, and

(vi) violent, argumentative, threatening, intimidating or disorderly behaviour, including harassment and assault; and

(d) a level 4 incident, which is an incident that constitutes a security threat and which includes but is not limited to

(i) an attempted or unauthorized intrusion into the flight deck,

(ii) a credible threat of death or serious bodily injury in an attempt to gain control over the aircraft,

(iii) the display or use of a weapon,

(iv) the sabotage of, or the attempt to sabotage, an aircraft that renders it incapable of flight or that is likely to endanger its safety in flight,

(v) any attempt to unlawfully seize control of the aircraft, and

(vi) an incident that is required to be reported under section 64 of the *Canadian Aviation Security Regulations*.



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PART VII - COMMERCIAL AIR SERVICES

SUBPART 6 - AIRCRAFT MAINTENANCE REQUIREMENTS FOR AIR OPERATORS

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NOTE

All amendments to the CARs will be indicated by the Coming into Force date, immediately following the amended text.

RECORD OF AMENDMENTS *

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* All persons making use of this consolidation are reminded that it is not an "official" copy. The original regulations and amendments thereto, as published in Part II of the *Canada Gazette*, should be consulted for the purpose of officially interpreting and applying the regulations.

[illegible]

706 - AIRCRAFT MAINTENANCE REQUIREMENTS FOR AIR OPERATORS

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PART VII - COMMERCIAL AIR SERVICES

SUBPART 6 - AIRCRAFT MAINTENANCE REQUIREMENTS FOR AIR OPERATORS

Application

706.01 This Subpart applies to every person who operates an aircraft in a commercial air service under this Part.

Maintenance Control System

706.02 No person shall operate an aircraft unless the aircraft is maintained in accordance with a maintenance control system that

- (a) meets the requirements of this Subpart; and
- (b) is described in the air operator's maintenance control manual (MCM) required by Section 706.08.

Duties of Certificate Holder (amended 2005/05/31)

706.03 (1) The holder of an air operator certificate shall
(amended 2005/05/31)

- (a) appoint a person responsible for the maintenance control system;
- (b) subject to subsection (4), ensure that the person responsible for the maintenance control system has achieved a grade of 70% or more in an open-book examination that demonstrates knowledge of the provisions of the *Canadian Aviation Regulations*;
- (c) ensure that the person responsible for the maintenance control system demonstrates to the Minister knowledge of the topics set out in subsection 726.03(1) of Standard 726 - *Air Operator Maintenance* of the *Commercial Air Service Standards* within 30 days after their appointment;
- (d) ensure that the person responsible for the maintenance control system performs the duties referred to in subsections 706.07(2) and (3);
- (e) provide the person responsible for the maintenance control system with the financial and human resources necessary to ensure that the holder of the air operator certificate meets the requirements of these Regulations;

(f) authorize the person responsible for the maintenance control system to remove aircraft from operation if the removal is justified because of non-compliance with the requirements of these Regulations or because of a risk to aviation safety or the safety of the public; and

(g) ensure that corrective actions are taken in respect of any findings resulting from a quality assurance program established under section 706.07.

(2) The Minister shall conduct an interview with the person appointed under paragraph (1)(a) to assess their knowledge of the topics referred to in paragraph (1)(c).
(amended 2005/05/31)

(3) The Minister shall notify the person appointed under paragraph (1)(a) of the results of the assessment and identify any deficiencies in their knowledge of the topics within ten days after the interview.
(amended 2005/05/31)

(4) The knowledge requirement set out in paragraph (1)(b) does not apply in respect of
(amended 2005/05/31)

(a) a person responsible for the maintenance control system who held that position on January 1, 1997; or

(b) the holder of an aircraft maintenance engineer (AME) licence.

(5) The holder of an air operator certificate shall ensure that no person is appointed to be responsible for the maintenance control system or remains responsible for the system if, at the time of their appointment or during their tenure, they have a record of conviction for
(amended 2005/05/31)

(a) an offence under section 7.3 of the Act; or

(b) two or more offences under any of sections 605.84 to 605.86 not arising from a single occurrence.

(6) The person responsible for maintenance control system of the holder of an air operator certificate may assign the management functions for specific maintenance control activities, to another person if the assignment and its scope are described in the maintenance control manual (MCM) of the air operator.
(amended 2005/05/31)

(7) If the holder of an air operator certificate is also the holder of an approved maintenance organization (AMO) certificate issued under section 573.02, the person appointed under paragraph (1)(a) shall be the person responsible for maintenance of the AMO appointed under paragraph 573.03(1)(a).
(amended 2005/05/31)

Maintenance Personnel and Facilities

706.04 An air operator shall provide the person who is responsible for its maintenance control system with the staff, facilities, technical and regulatory data, supplies and spare parts referred to in the *Commercial Air Service Standards* that are necessary to ensure compliance with this Subpart.

Defect Rectification and Control Procedures

706.05 An air operator shall include in its maintenance control system the procedures referred to in the *Commercial Air Service Standards* for

- (a) recording aircraft defects;
- (b) ensuring that defects are rectified in accordance with the requirements of these Regulations;
- (c) detecting defects that recur and identifying those defects as recurring defects; and
- (d) subject to Sections 605.09 and 605.10, scheduling the rectification of defects whose repair has been deferred.

Technical Dispatch Procedures

706.06 (1) An air operator shall include in its maintenance control system technical dispatch procedures to ensure that aircraft are not operated unless they are

- (a) airworthy;
- (b) appropriately equipped, configured and maintained for their intended use; and
- (c) maintained in accordance with the air operator's maintenance control manual (MCM).

(2) Where an additional flight authority has been issued in respect of an aircraft pursuant to Section 507.08, the technical dispatch procedures required by this Section shall include procedures to control the use of that additional flight authority.

(3) Where an air operator has a fleet empty weight and balance control program approved in accordance with the *Commercial Air Service Standards*, the technical dispatch procedures required by this Section shall include specific procedures that

- (a) ensure the quality of the program by meeting the applicable requirements of the *Commercial Air Service Standards*; and
- (b) ensure that accurate empty weight and balance data for each aircraft to which the program applies is provided to the flight crew of the aircraft, or is input into the program, prior to each flight.

Quality Assurance Program

(amended 2005/05/31)

706.07 (1) An air operator shall, in order to ensure that its maintenance control system and all of the included maintenance schedules continue to be effective and to comply with these Regulations, establish and maintain a quality assurance program that
(amended 2005/05/31)

(a) is under the sole control of the person responsible for the maintenance control system appointed under paragraph 706.03(1)(a); and

(b) meets the requirements of section 726.07 of Standard 726 - *Air Operator Maintenance* of the *Commercial Air Service Standards*.

(2) The person responsible for the maintenance control system shall distribute the records relating to the findings resulting from the quality assurance program to the appropriate manager for corrective action and follow-up in accordance with the policies and procedures specified in the maintenance control manual (MCM).
(amended 2005/05/31)

(3) The person responsible for the maintenance control system shall establish an audit system in respect of the quality assurance program that consists of the following:
(amended 2005/05/31)

(a) an initial audit within 12 months after the date on which the air operator certificate is issued;

(b) subsequent audits conducted at intervals set out in the MCM;

(c) a record of each occurrence of compliance or non-compliance with the MCM found during an audit referred to in paragraph (a) or (b);

(d) checklists of all activities controlled by the MCM and the maintenance schedules;

(e) procedures for ensuring that each finding of an audit is communicated to them and, if management functions have been assigned to another person under subsection 705.03(3) or

(4), to that person;

(f) follow-up procedures for ensuring that corrective actions are effective; and

(g) a system for recording the findings of initial and periodic audits, corrective actions and follow-ups.

(4) The records required under paragraph (3)(g) shall be retained for the greater of
(amended 2005/05/31)

(a) two audit cycles; and

(b) two years.

(5) The duties related to the quality assurance program that involve specific tasks or activities within an air operator's activities shall be fulfilled by persons who are not responsible for carrying out those tasks or activities.

(amended 2005/05/31)

Maintenance Control Manual (MCM)

706.08 (1) An air operator shall establish, maintain and authorize the use of a maintenance control manual (MCM) that contains information to ensure the efficiency of the maintenance control system, as set out in the *Commercial Air Service Standards*.

(2) The Minister may authorize the incorporation by reference in an MCM of detailed procedures manuals prepared by the air operator, where

(a) the policies affecting the detailed procedures remain in the MCM;

(b) the incorporation is clearly indicated in the MCM;

(c) the air operator ensures that the incorporated manuals meet the requirements of this Section; and

(d) the person responsible for the air operator's maintenance control system, or the person to whom the management function has been assigned pursuant to subsection 706.03(3), has certified in writing that the incorporated manuals meet the requirements of this Section.

(3) Except where otherwise authorized by the Minister in writing where it is demonstrated that the granting of the authorization will not jeopardize the safety of the product or service, an air operator shall comply with the policies and procedures contained in its MCM.

(4) An air operator shall submit each page of its MCM to the Minister for approval, either individually or in accordance with an equivalent procedure that meets the applicable requirements of the *Commercial Air Service Standards*.

(5) An air operator shall amend its MCM when instructed to do so by the Minister where

(a) the MCM does not meet the requirements of this Subpart; or

(b) the MCM contains policies or procedures, or a lack thereof, such that the air operator's maintenance control system no longer meets the requirements of these Regulations.

(6) An air operator shall provide the means to ensure that a current copy of its MCM, or of the relevant portions of its MCM, is made available to each person who performs or certifies a function that is dealt with in the MCM or in any manual that is incorporated in the MCM in accordance with subsection (2).

(7) An air operator shall amend each copy of its MCM within 30 days after the approval of an amendment under subsection (8).

(amended 2009/05/28)

(8) The Minister shall approve an air operator's MCM, and any amendments to that manual, if the requirements of the *Commercial Air Service Standards* are met.
(amended 2000/12/01)

Maintenance Arrangements

706.09 (1) No air operator shall permit a person or organization to perform maintenance on the air operator's aircraft unless the person or organization has adequate facilities, equipment, spare parts and personnel available at the site where the maintenance is to be performed and

(a) the person or organization holds an approved maintenance organization (AMO) certificate issued pursuant to Section 573.02 with a rating in a category applicable to the maintenance to be performed;

(b) where the maintenance is to be performed outside Canada by a person or organization that does not hold an AMO certificate issued pursuant to Section 573.02, the person or organization has been approved under the laws of a state that is party to an agreement with Canada that provides for recognition of the work performed; or

(c) in cases other than those described in paragraphs (a) and (b), the performance of the maintenance by the person or organization has been approved by the Minister as being in conformity with these Regulations.

(2) An air operator shall ensure that a maintenance arrangement made with a person or organization pursuant to subsection (1)

(a) specifies the maintenance required and clearly defines the tasks to be performed; and

(b) is made in accordance with the procedures governing maintenance arrangements included in the MCM or is approved by the Minister as being in conformity with these Regulations.

(3) Where an air operator makes a maintenance arrangement to have maintenance performed outside Canada by a person or organization that does not hold an AMO certificate issued pursuant to Section 573.02, the Minister shall, in the following cases, authorize the arrangement by issuing a maintenance specification to indicate that the maintenance control procedures set out in the arrangement conform to the *Commercial Air Service Standards*:

(a) the maintenance is performed by a person or organization that has been approved in accordance with paragraph (1)(b) and the issuance of a maintenance specification is either required by the agreement or requested by the foreign state; or

(b) the maintenance is performed in a state that is not party to an agreement with Canada that provides for recognition of the work performed.

(4) An air operator shall ensure the completion of all of the tasks defined in a maintenance arrangement in accordance with subsection (2).

Elementary Work

706.10 No air operator shall authorize a person to perform, without supervision, a task that is elementary work set out in the *Aircraft Equipment and Maintenance Standards* unless the person

- (a) has satisfactorily completed training for the task under a training program required by Section 706.12; and
- (b) has previously performed that task under the direct supervision of the holder of an aircraft maintenance engineer (AME) licence or a training organization approved pursuant to Subpart 3 of Part IV.

Servicing

706.11 An air operator shall ensure that each person who performs or requests the performance of servicing has satisfactorily completed training, under a training program required by Section 706.12, for the servicing to be performed.

Training Program

706.12 An air operator shall implement a training program to ensure that persons who are authorized to perform a function under this Subpart are trained in respect of the regulations, standards and air operator procedures applicable to that function, as specified in the *Commercial Air Service Standards*.

Personnel Records

706.13 (1) An air operator shall establish, maintain and retain for at least two years after an entry is made, for each affected person, a record of

- (a) all personal qualifications in respect of any appointment made pursuant to Section 706.03;
- (b) any authorization to perform elementary work given in accordance with Section 706.10 and incorporated in the maintenance control manual (MCM) in accordance with the *Commercial Air Service Standards*; and
- (c) all training conducted pursuant to Section 706.12.

(2) The air operator shall provide a copy of each record required by subsection (1) to the person to whom the record refers on the completion of any training or the giving of an authorization referred to in paragraph (1)(b).

Service Difficulty Reporting

706.14 The holder of an air operator certificate shall report to the Minister, in accordance with Division IX of Subpart 21 of Part V, any reportable service difficulty related to any aircraft that it operates.
(amended 2009/12/01)

Safety Management System

706.15 The holder of an air operator certificate issued under section 705.07 shall, for all maintenance control activities performed under this Subpart, adhere to the requirements set out in section 705.151 or 705.154 with respect to a safety management system.
(amended 2005/05/31)



Transport Canada
Safety and Security

Transports Canada
Sécurité et sûreté

CARs

CANADIAN AVIATION REGULATIONS

***COMMERCIAL AIR SERVICES
STANDARDS***

720 - GENERAL



Canada

NOTE

All amendments to the CARs will be indicated by the Coming into Force date, immediately following the amended text.

RECORD OF AMENDMENTS

[illegible]

[illegible]

720 - COMMERCIAL AIR SERVICE STANDARDS - GENERAL

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Foreword

This Commercial Air Service Standard outlines the requirements for complying with Part VII of the *Canadian Aviation Regulations*.

For ease of cross reference the divisions and numbers of the standard are assigned to correspond to the regulations, therefore section 720.05 would reflect a standard required by section 700.05 of the *Canadian Aviation Regulations*.

PART VII - COMMERCIAL AIR SERVICES STANDARDS

720 - GENERAL

DIVISION I - GENERAL

720.01 Definitions

The words and expressions used in these Standards have the same meaning as in General Provisions, Section 101.01 of the *Canadian Aviation Regulations* and in Division I - General, of the Commercial Air Services, Part VII of the *Canadian Aviation Regulations* with the following additions:

(amended 2000/06/01)

“flight relief facility - seat” - means a comfortable, fully reclining seat, separated and screened from the passengers and flight deck, equipped with a call device, sleep restraint, portable oxygen, and not subject to distraction from noise generated in the cabin. (*poste de repos - siège*)

“flight relief facility - bunk” - means a bunk that meets the Society of Automotive Engineers (SAE) *Aerospace Recommended Practice (ARP) 4101/3, Crew Rest Facilities*, used in conjunction with *ARP 4101, Flight Deck Layout and Facilities*. (*poste de repos - couchette*)

“heli-logging” - means the removal and carriage of logs and shake blocks by helicopter external load means, including water-bucketing performed as part of a contractual arrangement between the logging contractor and the air operator within the contractual logging area. (*hélidébardage de billots*)

(amended 2000/06/01)

“scheduled air service” - means a publicly available air transport service that provides transportation for passengers between points and serves those points in accordance with a published schedule at a charge per seat. (*service aérien régulier*)

(amended 1998/03/23)

720.03 Authorization to Operate Specialty Air Services under NAFTA

(1) The standard in an application for authorization to operate specialty air services under the *North American Free Trade Agreement* in Canada without the requirement for a Canadian operator certificate is as follows:

- (a) the legal and trade name of the company and address of the air operator;
- (b) if applicable, the date of incorporation and registration number;

- (c) a copy of the contract for specialty air services in Canada excluding financial details;
- (d) dates of proposed operation, including start and finish;
- (e) a copy of the *Certificate of Airworthiness* for each aircraft to be operated in Canada;
- (f) the type of aircraft and registration marks for those aircraft operated in Canada;
- (g) the pilot(s) name(s), address(es) and licence number(s);
- (h) the proposed type of aerial work;
- (i) area of operation, including proposed base;
- (j) name of approved maintenance organization and approval number;
- (k) operating conditions;
- (l) name, address, telephone and telefax number of managerial personnel; and
- (m) any other document the Minister deems necessary.

(2) The standard in an application for authorization to operate specialty air services under the *North American Free Trade Agreement* in Canada with the requirement for a Canadian operator certificate is as follows:

- (a) a copy of the contract for specialty air services in Canada excluding financial details;
- (b) dates of proposed operation, including start and finish;
- (c) a copy of the *Certificate of Airworthiness* for each aircraft to be operated in Canada if different from those authorized to operate in Canada;
- (d) the type of aircraft and registration marks for those aircraft referred to in paragraph (c);
- (e) the pilot(s) name(s), address(es) and licence number(s);
- (f) the proposed type of aerial work;
- (g) if applicable, the number of the Canadian air operator certificate;
- (h) if applicable, the date of issue of the Canadian air operator certificate; and
- (i) any other document the Minister deems necessary.

720.06 *Extended Charter*

An air operator shall:

- (a) retain operational control of the aircraft;
- (b) provide the crew members;
- (c) be responsible for the maintenance of the aircraft and its equipment in accordance with the approved *Maintenance Control Manual*;

- (d) have insurance coverage for the aircraft, passengers, baggage and cargo;
- (e) where the aircraft is painted in the Charterer's colours, display clearly and legibly near the main cabin door of the aircraft, where passengers are boarding, the words "OPERATED BY (name of air operator which has been issued the operations specification)";
(amended 2000/12/01)
- (f) the Canadian air operator shall ensure that the requirements of Part VII of the *Canadian Aviation Regulations* relating to flight operations and continuing airworthiness are complied with during the period of the agreement; and
- (g) where a foreign Civil Aviation Authority is involved (i.e. extended charter to a foreign air operator) the foreign air operator shall acquire prior to the commencement of operations the following:
 - (i) a letter stating that the foreign Civil Aviation Authority is aware of and has no objection to the proposed operation; and
 - (ii) authorization to allow Transport Canada Air Carrier Operations and Airworthiness Inspectors to visit the operations from time to time to conduct necessary inspections of personnel, aircraft maintenance facilities and/or documents as necessary.

720.07 Management Agreement

The standards for an air operator to manage another air operator are:

- (a) the managing air operator has an air operator certificate in his own right for the commercial air service and aircraft or similar types of aircraft for which the air operator to be managed holds a valid air operator certificate;
- (b) the managing air operator's supervisory personnel are qualified in accordance with the applicable Subpart of this Part to act in supervisory positions for both the managing air operator and the air operator to be managed; and
- (c) the managing air operator shall show that the Operational Control System required by this standard is adequate for the proposed operations.

720.08 Operations Between Points Abroad

A Canadian air operator operating between points abroad shall:

(amended 2000/06/01)

- (a) ensure that the requirements of Part VII of the *Canadian Aviation Regulations* relating to flight operations and continuing airworthiness are complied with while operating abroad;
- (b) ensure maintenance arrangements are approved by Transport Canada in accordance with Part VII of the *Canadian Aviation Regulations*;

(c) where the operations are intended to exceed 21 consecutive days, establish a sub-base abroad and have that sub-base added to the air operator certificate; and

(amended 2000/06/01)

(d) where a foreign Civil Aviation Authority is involved, acquire prior to the commencement of operations abroad the following:

(amended 2000/06/01)

(i) a letter stating that the foreign Civil Aviation Authority is aware of and has no objection to the proposed operations; and

(amended 2000/06/01)

(ii) for operations intended to exceed 21 consecutive days, an authorisation allowing Transport Canada Air Carrier Operations and Airworthiness Inspectors to visit the operations from time to time in order to conduct the necessary inspections of personnel, aircraft maintenance facilities and/or related documents.

(amended 2000/06/01)

DIVISION II - STANDARDS FOR FLIGHT TIME AND FLIGHT DUTY TIME LIMITATIONS AND REST PERIODS

720.15 *Flight Time Limitations*

The standards for increasing the flight time limitations for flight crew members are:

(1) Where the flight is conducted under Subpart 2 or 3 of Part VII of the *Canadian Aviation Regulations* or with a deHavilland DHC-6 aircraft not conducting a scheduled passenger service or with a helicopter not conducting a scheduled passenger service or heli-logging, for any 6 non-overlapping periods of 30 consecutive days within a 365 consecutive day period, the maximum flight time in any aircraft shall not exceed:

(amended 1998/03/23)

(a) where the flight crew member conducts single-pilot IFR operations, 8 hours in any 24 consecutive hours;

(b) 60 hours in any 7 consecutive days;

(c) 150 hours in any 30 consecutive days;

(d) 210 hours in any 42 consecutive days;

(amended 1998/03/23)

(e) 450 hours in any 90 consecutive days;

(amended 1998/03/23)

(f) 900 hours in any 180 consecutive days;

(amended 1998/03/23)

(g) the accumulated 30-consecutive day, 42-consecutive day and 90 consecutive day flight times may be reset to zero if the flight crew member is provided with at least 5 consecutive days free from all duty; and

(amended 1998/03/23)

(h) 1200 hours in any 365 consecutive days.

(amended 1998/03/23)

(2) For heli-logging operations, the maximum flight time in all flying shall not exceed:

(a) 120 hours in any 30 consecutive days for single-pilot helicopters;

(b) 150 hours in any 30 consecutive days for helicopters operated by two pilots; and

(c) 1,200 hours in any 365 consecutive days.

720.16 *Flight Duty Time Limitations and Rest Periods*

The standards for increasing the flight duty time limits for flight crew members are:

(1) Where the flight is conducted under Subpart 2 or 3 of Part VII of the *Canadian Aviation Regulations* or with a deHavilland DHC-6 aircraft not conducting a scheduled passenger service, or with a helicopter not conducting a scheduled passenger service or heli-logging, for the 6 non-overlapping periods of 30 consecutive days referred to in subsection 720.15(1), the maximum flight duty time may be extended to 15 consecutive hours if:

(amended 1998/03/23)

(a) the minimum rest period is increased by 1 hour; or

(b) the maximum flight time does not exceed 8 hours in any 24 consecutive hours.

(2) Where the flight is conducted under Subpart 4 or 5 of Part VII of the *Canadian Aviation Regulations* using an aircraft other than a helicopter, and the flight crew is augmented by the addition of at least one fully qualified flight crew member, flight duty time may be extended to 15 consecutive hours if:

(amended 1998/03/23)

(a) the additional flight crew member occupies a flight deck observer seat during take-offs and landings unless the observer seat is required by an air carrier inspector, in which case, a passenger seat must be available for the flight crew member; and

(amended 1998/03/23)

(b) the subsequent minimum rest period is increased by at least 2 hours.

(amended 1998/03/23)

(3) Where a flight crew is augmented by the addition of at least one flight crew member, the division of duty and rest is balanced between the flight crew members and a flight relief facility is provided, flight duty time may be extended if:

(a) where a flight relief facility - seat is provided, the flight duty time may be extended to 17 consecutive hours, in which case the maximum flight deck duty time for any flight crew member shall be 12 hours;

(b) where a flight relief facility - bunk is provided, the flight duty time may be extended to 20 consecutive hours, in which case the maximum flight deck duty time for any flight crew member shall be 14 hours;

(c) the subsequent minimum rest period shall be at least equal to the length of the preceding flight duty time; and

(d) a maximum of 3 sectors may be completed.

(4) Where a flight crew is augmented by the addition of at least one flight crew member in accordance with subsections (2) or (3), the total flight time accumulated during the flight shall be logged by all flight crew members for the purposes of calculating the maximum flight times in section 700.15 of the *Canadian Aviation Regulations*.

(amended 1998/09/01)

(5) Where the flight is conducted under Subpart 2 of the *Canadian Aviation Regulations* in aerial application operations, the maximum flight duty time may be extended for a split flight duty assignment provided that:

(a) the total flight duty time shall not exceed 14 hours in 24 consecutive hours;

(amended 1998/03/23)

(b) rest periods that allow a total of at least 9 hours opportunity to sleep in 24 consecutive hours shall be taken in suitable accommodation;

(amended 1998/03/23)

(c) one of these rest periods shall allow at least 5 consecutive hours opportunity to sleep between 20:00 and 06:00 local time; and

(amended 1998/03/23)

(d) the flight crew member shall receive at least 5 periods of 24 consecutive hours free from duty within each 30 consecutive days.

(amended 1998/03/23)

720.17 Unforeseen Operational Circumstances

The standards for compliance with this section are:

(1) Flight duty time and flight time limitations may be extended by up to 3 consecutive hours provided that:

(amended 1998/03/23)

(a) where flight duty time is extended, the subsequent minimum rest period shall be increased by an amount at least equal to the extension to the flight duty time;

(amended 1998/03/23)

(b) the pilot-in-command shall notify the air operator, in accordance with procedures outlined in the company operations manual, of the length of and the reason for the extension;

(c) the air operator shall retain the notifications until the completion of the next Department of Transport audit; and

(d) the air operator shall notify the Minister as soon as practicable.

(2) Flights shall be planned to be completed within the maximum flight time and maximum flight duty time taking into account the time necessary for pre-flight and post-flight duties, the flight or series of flights, forecast weather, turn-around times and the nature of the operation.

720.19 Requirements for Time Free from Duty

The standard for providing a number of rest periods other than as required by subsection 700.19(1) of the *Canadian Aviation Regulations* is:

(1) Where the flight is conducted under Subpart 2 or 3 of Part VII of the *Canadian Aviation Regulations*, or with a deHavilland DHC-6 aircraft not conducting a scheduled passenger service or with a helicopter not conducting a scheduled passenger service, or heli-logging, the 24 consecutive hours 3 times within each 30 consecutive days may be replaced by:

(amended 1998/03/23)

(a) following at least 5 consecutive periods of 24 consecutive hours free from duty, a flight crew member may be assigned duty for up to 42 consecutive days; and

(amended 1998/03/23)

(b) the flight crew member shall receive at least 5 consecutive periods of 24 consecutive hours free from duty following any assignment that exceeds 27 consecutive days.

(amended 1999/09/01)

720.21 Flight Crew Members on Reserve

The standards for compliance with this section are:

(1) An air operator shall provide each flight crew member with an opportunity to obtain at least 8 consecutive hours sleep in any 24 consecutive hours while on reserve by one of the following methods:

(a) the air operator shall provide the flight crew member with 24 hours notice of the time of commencement and duration of the rest period. The designated rest period cannot shift more than 3 hours earlier or later than the preceding rest period, nor more than a total of 8 hours in any 7 consecutive days;

(b) the flight crew member shall be given a minimum of 10 hours notice of the assignment and shall not be assigned any duty for these 10 hours; or

(c) the air operator shall not assign the flight crew member to flight duty time and shall not interrupt the flight crew member's rest period between 22:00 and 06:00 local time.

(2) Where an air operator is unable to provide a flight crew member with a rest period required by subsection (1) and the flight crew member is notified to report for flight duty or the reporting time occurs between 22:00 and 06:00 local time:

(a) the maximum flight duty time shall be 10 consecutive hours; and

(b) the subsequent minimum rest period shall be increased by at least one-half the length of the preceding flight duty time.

720.23 *Controlled Rest on the Flight Deck*

The standards for compliance with this section require that the air operator's program is outlined in the company operations manual and contains the following elements:

(1) Training

Every flight crew member who participates in the controlled rest on the flight deck program shall have received training in the program as well as training in the general principles of fatigue and fatigue countermeasures.

(2) Pre-flight Activities

(a) The pilot-in-command shall determine if operational considerations allow or preclude the use of controlled rest on the flight deck based on guidelines developed by the air operator;

(b) the flight crew members' rest periods will be planned at a pre-flight briefing to enable them to anticipate and maximize the sleep opportunity and to manage their alertness. If required, this briefing can occur in flight; and

(c) the briefing shall include:

- (i) the choice of rest sequence;
- (ii) planned and unplanned wake-up criteria;
- (iii) transfer of control procedures; and
- (iv) co-ordination with the flight attendants.

(3) Pre-rest Period

Pre-rest period activities should take approximately 5 minutes and shall include:

- (a) the transfer of duties;
- (b) an operational briefing;
- (c) completion of physiological needs;
- (d) co-ordination with the flight attendants; and
- (e) time for the flight crew member preparing to rest to become comfortable in the flight deck seat.

(amended 1998/03/23)

(4) Rest Period

(a) Only one flight crew member at a time shall rest and the other flight crew member(s) shall remain alert. An alertness monitor may be considered as a back-up system;

(amended 1998/03/23)

(b) The resting flight crew member's duties shall be completed by the non-resting flight crew member(s);

amended 1998/03/22

(c) All flight crew members shall remain on the flight deck throughout the rest period;

(d) Each rest period shall be limited to a maximum of 45 minutes to avoid sleep inertia when the flight crew member is awakened;

(e) Rest periods shall occur only during the cruise phase of the flight and shall be completed at least 30 minutes before planned top of descent, workload permitting, and

(f) If required, more than one sleep opportunity may be taken by the flight crew members.

(5) Post-rest Period

(a) Unless required due to an abnormal or emergency situation, at least 15 minutes without any flight duties should be provided to the awakened flight crew member to allow sufficient time to become fully awake before resuming normal duties; and

(b) an operational briefing shall be given to the awakened flight crew member.



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CANADIAN AVIATION REGULATIONS

***COMMERCIAL AIR SERVICE
STANDARDS
721 - FOREIGN AIR
OPERATIONS***



Canada

Commercial Air Service Standards

Foreign Air Operations

Foreword

This Commercial Air Service Standard outlines the requirements for complying with the Foreign Air Operations Regulation (*Canadian Aviation Regulations*, Part VII, Subpart 1)

For ease of cross reference the divisions and numbers of the standard are assigned to correspond to the regulations, therefore Standard 721.05 would reflect a standard required by section 701.05 of the *Regulations*.

**Commercial Air Service Standards
Foreign Air Operations**

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Commercial Air Service Standards Foreign Air Operations

Division I

General

- 721.01 (1)** The standards under this subpart apply in respect of any air transport service involving the use of an aeroplane or helicopter engaged in by a foreign operator operating an air transport service and foreign state aircraft operated in Canada under the *Canadian Aviation Regulations*, Part VII, Subpart 1.
- (2) The words and expressions used in these Standards have the same meaning as in the *General Provisions Regulations*, (*Canadian Aviation Regulations*, Part I).

Division II

Certification and Authorization Issuance or Amendment of Air Operator Certificate

Application for or Amendment of a Canadian Foreign Air Operator Certificate

- 721.07 (1)** The following constitutes an application for or an amendment of a Canadian foreign air operator certificate:
- (a) a copy of a valid air operator certificate (AOC) or equivalent document (certificate of competency) issued by the State of the operator;
 - (b) a copy of the approval page indicating those portions of the air operator's operations manual that have been approved by the State of the operator;
 - (c) a copy of the air operator's authority to operate an air transport service to and from Canada;
 - (d) a copy of a valid Certificate of Airworthiness for each aircraft intended to be operated in Canada;
 - (e) a copy of the schedule that indicates when servicing and maintenance is required to be performed for each aircraft intended to be operated, whether or not approved by the State of registry;

- (f) a copy of the approval of the servicing and maintenance schedule for each aircraft intended to be operated, if required by the State of registry;
- (g) where the performance, in Canada, or any part of the schedule for servicing and maintenance of the aircraft, intended to be operated, is assigned to a maintenance organization, a copy of such approval issued by the State of registry;
- (h) for those aircraft intended to be operated in Canada not registered by the State of the operator, a copy of the lease agreement for each aircraft so operated;
- (i) if applicable, a copy of an aircraft ground icing operations program, approved by the State of the operator or a copy of a program made in accordance with subsection 721.25 (1) of these standards;
- (j) if applicable, verification from the State of the operator that the pilot-in-command and flight crew operating into Canada and any individuals referred to in subsection 701.25(6) have received annual recurrent training concerning surface contamination in accordance with subsection 721.25(2) of these standards;
- (k) where the foreign air operator desires a special flight operations specification in accordance with subparagraphs 701.08(g)(i), (ii), (iii), (iv), (v) and (vi) the operator must provide a copy of the equivalent operations specification(s) approved by the State of the operator; and
- (l) any other document the Minister deems necessary in order to ensure that the intended operation will be conducted safely.

721.10 The following information shall be provided in an application for flight authorization to conduct an overflight of Canada or operate in Canada or perform a technical stop in Canada:

- (a) name of operator or person responsible for flight;
- (b) type of aircraft and registration marks;
- (c) date and time of arrival at, and departure from, the airport concerned;
- (d) place or places of embarkation or disembarkation abroad, as the case may be, of passengers or freight;
- (e) purpose of flight and number of passengers and the nature and amount of freight;
- (f) notification of dangerous goods and/or agricultural products; and

- (g) name, address, telephone and telefax number and business of Charterer, if any;
- (h) if applicable, in the case of foreign state aircraft, a copy of the equivalent operations specification(s) issued by the regulating authority, and
- (i) any other document the Minister deems necessary to ensure that the intended operation will be conducted safely.

Division III

Flight Operations

Routes in Uncontrolled Airspace

721.18 The following standard shall be complied with by a foreign air operator who conducts a flight in uncontrolled airspace:

- (1) the off-airway direct route or route segment may be used provided the flight planned route and means of navigation is acceptable to the Air Traffic Control Service concerned;
- (2) all routes, route segments or airspace to be used shall be listed and available to each flight crew member and the person responsible for operational control of the flight and include the information on navigation aids, tracks, altitudes and distances for each route;
- (3) the aircraft is equipped, dispatched and operated in accordance with the accepted procedures outlined in the Operations Manual;
- (4) the approved navigation system(s) is (are) not to be used for navigation in terminal control areas or during instrument approach, unless specifically authorized to do so by the state of the operator; and
- (5) the foreign air operator holds a valid authority from the State of the operator to conduct flights in uncontrolled airspace.

721.19 No Alternate Aerodrome - IFR Flight**Aeroplanes**

The standard for a foreign air operator or foreign state aircraft multi-engine turbine powered aeroplanes to conduct a flight under IFR without naming an alternate aerodrome on the flight plan is:

(1) Area of Operations

- (a) take-off aerodrome shall be:
 - (i) situated within the North American continent, the Caribbean Islands and Bermuda; and
 - (ii) not more than the hours of flight time (Scheduled) from the aerodrome of intended landing;
- (b) aerodrome of intended landing authorized for no alternate IFR shall meet the requirements of subsection (3);
- (c) provided the requirements of subsections (2), (3), (4), (5) and (6) are met, the pilot-in-command may refile "No Alternate IFR" on flights to a destination aerodrome in Canada, regardless of the location of the departure aerodrome, when within six hours of the scheduled destination aerodrome;

(2) Weather Requirements

For at least one (1) hour before and until one (1) hour after the estimated time of arrival at the aerodrome of intended landing, there shall be, in respect to that aerodrome:

- (a) no risk of fog or other restriction to visibility, including precipitation, forecast or reported, below 3 miles;
- (b) no risk of thunderstorms isolated or otherwise forecast or reported;
- (c) a forecast ceiling of at least 1,000 feet above FAF altitude and a visibility of at least 3 miles or a ceiling of at least 1,500 feet above the MDA and a visibility of at least 6 miles; and
- (d) no risk of freezing rain, freezing drizzle, or sleet forecast or reported;

(3) **Aerodrome of Intended Landing - Requirements**

- (a) the aerodrome of intended landing shall be:
- (i) equipped with at least two (2) separate runways each of which shall be operational and suitable for a safe landing for the aeroplane type, taking into consideration the approved operational limitations; and

NOTE: (The reciprocal of one runway is not acceptable as the second runway.)

- (ii) equipped with emergency or standby electrical power supply in support of the main electrical power supply used to operate all equipment and facilities that are essential to the safe landing of the aeroplane, whether such landing be by day or by night;

(4) **Fuel Requirements**

The minimum fuel required for a no alternate IFR flight plan shall consist of:

- (a) taxi fuel;
- (b) fuel to destination;
- (c) contingency fuel;
- (d) holding reserve fuel; and
- (e) fuel for flights in International and Northern Airspace shall be additional contingency fuel or enroute reserve fuel, whichever is the greater;

(5) **Aerodrome Familiarization**

Pilots shall be thoroughly familiar with all suitable diversionary aerodromes which are available (within the fuel and oil reserve carried) in respect of any flight operated on a "no alternate IFR" basis.

(6) **Authority**

This authority is contingent on holding a valid Civil Aviation authority from the State of the operator or in the case of a foreign state aircraft, the applicable authority, for conducting a flight under IFR without naming an alternate aerodrome on the flight plan.

Helicopters

The standard for a foreign air operator or foreign state operating the type(s) of helicopters defined in sections 703.01 and 704.01 to conduct an IFR flight when an alternate aerodrome has not been designated in the IFR flight plan or in the IFR flight itinerary is:

- (a) the company operations manual or in the case of a foreign state aircraft, the applicable manual, shall contain guidance on the execution of no alternate IFR flights;
- (b) flight following personnel are to be aware that the flight is operating no alternate IFR and shall have current weather readily accessible for timely communication to the flight;
- (c) pilots-in-command are to be familiar with diversionary aerodromes;
- (d) the destination shall not be more than three (3) hours flight planned time from the departure point;
- (e) terminal forecasts and weather reports shall be available for the destination which show that, for at least two hours before until two hours after the estimated time of arrival, there will be:
 - (i) no risk of fog, precipitation or other restriction to visibility below three (3) miles;
 - (ii) no risk of thunderstorms or freezing precipitation; and
 - (iii) a ceiling of at least 1000 feet and a visibility of at least three (3) miles.
- (f) contingent on holding a valid Civil Aviation authority from the State of the operator or in the case of foreign state aircraft, the applicable authority, to conduct a flight with helicopters under IFR without naming an alternate aerodrome in the flight plan.

721.20

Take-Off Minima Reported RVR 1,200 feet (1/4 mile) Visibility

The standard for a foreign air operator or a foreign state operating turbine-powered aeroplanes to take-off in IMC below the weather minima specified in the *Canada Air Pilot* or in an equivalent foreign publication is:

- (a) the Company Operations Manual or in the case of a foreign state aircraft, the applicable manual, shall contain detailed guidance on how to determine departure one engine inoperative climb gradient and obstacle clearance;

- (b) the runway is equipped with serviceable and functioning high intensity runway lights or runway centre line lights or with runway centre line markings that are plainly visible to the pilot throughout the take-off run;
- (c) the pilot-in-command is satisfied that the required RVR 1,200 feet ($\frac{1}{4}$ mile) visibility exists for the runway to be used before commencing take-off;
- (d) the pilot-in-command and second-in-command attitude instruments (artificial horizons) on the aeroplane shall incorporate pitch attitude index lines in appropriate increments above and below reference line to at least 15° , and be capable of ensuring ready depiction of total aeroplane attitude. The approved Failure Warning Systems which will immediately detect essential instrument and equipment failures or malfunctions shall be operative; and
- (e) contingent on holding a valid Civil Aviation authority from the State of the operator or in the case of a foreign state aircraft, the applicable authority, for operation of a turbine-powered aeroplane in IMC below the weather minima specified in the *Canada Air Pilot* or an equivalent foreign publication.

Aeroplanes

Take-Off Minima Reported RVR 600 feet

- (1) the Company Operations Manual or in the case of a foreign state aircraft, the applicable manual, shall contain detailed guidance on how to determine departure one engine inoperative climb gradient and obstacle clearance;
- (2) the runway has the following equipment:
 - (a) serviceable and functioning high intensity runway lights, runway centre line lights and centre line markings that are plainly visible to the pilot throughout the take-off run;
 - (b) at least two transmissometers, one situated at the approach end and one at the mid-point of the runway, each reading not less than RVR 600 feet; and
 - (c) if three transmissometers are available and the mid-point transmissometer is unserviceable, take-off is authorized provided the transmissometers at the approach end and the departure end of the runway, each is reading not less than RVR 600 feet;
- (3) the pilot-in-command is satisfied that the required RVR 600 feet visibility exists for the runway to be used before commencing take-off;

- (4) the pilot-in-command and second-in-command attitude instruments (artificial horizons) on the aeroplane shall incorporate pitch attitude index lines in appropriate increments above and below the zero pitch reference line to at least 15° , and be capable of ensuring ready depiction of total aeroplane attitude. The approved Failure Warning Systems which will immediately detect essential instrument and equipment failures or malfunctions shall be operative;
- (5) contingent on holding a valid Civil Aviation authority from the State of the operator or in the case of a foreign state aircraft, the appropriate authority for operation of a turbine-powered aeroplane in IMC below the weather minima specified in the *Canada Air Pilot* or an equivalent foreign publication.

Helicopters

Take-Off Minima Reported RVR 600 feet

- (1) the company operations manual or in the case of a foreign state aircraft, the applicable manual, shall contain detailed guidance on how to determine departure one engine inoperative climb gradient and obstacle clearance;
- (2) the take-off runway is equipped with:
 - (i) serviceable and functioning high intensity runway lights, runway centre line lights and centre line markings that are plainly visible to the pilot throughout the take-off;
 - (ii) at least one transmissiometer, situated at either the approach end or mid point of the take-off runway with a reading of not less than RVR 600 feet;
- (3) the pilot-in-command is satisfied that the required RVR 600 feet visibility exists for the take-off runway and visual reference to the runway can be maintained at least until V_{toss} (take-off safety speed) and V_{mini} (instrument flight minimum speed) have been attained;
- (4) the pilot-in-command and second-in-command attitude (artificial horizons) instruments incorporate pitch attitude index lines in appropriate increments above and below the zero pitch reference to at least 15 degrees and incorporate operative failure warning systems which will immediately detect essential instrument malfunction or failure;
- (5) contingent on holding a valid Civil Aviation authority from the State of the operator or in the case of a foreign state aircraft, the applicable authority for operation of a helicopter in IMC below the weather minima specified in the *Canada Air Pilot* or an equivalent foreign publication.

Transport of Passengers in Single-Engined Aircraft in IFR Flight or in Night VFR Flight

721.22 The standard for a foreign air operator operating aircraft for the transport of passengers in a single-engined aeroplane under IFR, or VFR at night is:

(1) General

- (a) only factory built, turbine-powered aeroplanes are permitted;
- (b) the turbine-engine of the aeroplane type must have a proven Mean Time Between Failure (MTBF) of .01/1000 or less established over 100,000 hours in service;
- (c) no flight may include sectors over Designated Mountainous Regions 1 or 5 as defined in the *Designated Airspace Handbook* (TP 1820).

(2) Aeroplane Equipment Requirements

- (a) two attitude indicators which are powered separately and independently from each other;
 - (b) two independent power generating sources, either of which is capable of sustaining essential flight instruments and electrical equipment;
 - (c) an auto-ignition system, or alternatively, the company operations manual must specify that continuous ignition must be selected "ON" for take-off, landing and flight in heavy precipitation;
 - (d) a chip detector system to warn the pilot of excessive ferrous material in the engine lubrication system;
 - (e) a radar altimeter;
 - (f) a manual throttle which bypasses the governing section of the fuel control unit and permits continued unrestricted operation of the engine in the event of a fuel control unit failure.
- (3) contingent on holding a valid Civil Aviation authority from the State of the operator for operation of single-engined aircraft in IFR flight or in night VFR flight with passengers.

Division IV

Ground De-Icing/Anti-Icing

Ground Icing Operations Standard/Annual Surface Contamination Training

- 721.25**
- (1) ground icing operations program shall be made in accordance with the *Ground Icing Operations Standards*.
 - (2) A foreign air operator shall establish and maintain a training program concerning the adverse effects of surface contamination in accordance with subsection 725.124(23) of the *Commercial Air Service Standards*.



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CANADIAN AVIATION REGULATIONS

*COMMERCIAL AIR SERVICES
STANDARDS*

722 - AERIAL WORK

Canada

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NOTE

All amendments to the CARs will be indicated by the Coming into Force date, immediately following the amended text.

RECORD OF AMENDMENTS

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722 - AERIAL WORK

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Foreword

This Commercial Air Services Standard outlines the requirements for complying with Subpart 702 of the *Canadian Aviation Regulations*.

For ease of cross reference the divisions and numbers of the standard are assigned to correspond to the regulations, therefore Standard 722.06 would reflect a standard required by Section 702.06 of the *Canadian Aviation Regulations*.

PART VII - COMMERCIAL AIR SERVICES

STANDARD 722 - AERIAL WORK

DIVISION I - GENERAL

722.01 *Application*

The standards under this subpart apply to every Canadian operator engaged in commercial air services under Subpart 702 of the *Canadian Aviation Regulations*.

Definitions

The words and expressions used in these standards have the same meaning as in the General Provisions Section 100.01 of the *Canadian Aviation Regulations*, with the following additions:

- “attaching device” - means the structural components on the aircraft used to attach an external load to an aircraft. (*dispositif de fixation*)
- “disembark” - means to unload, deplane or leave an aircraft. (*débarquement*)
- “embark” - means to load, emplane or enter an aircraft. (*embarquement*)
- “evacuate” - means the egress from an aircraft in an emergency situation using all available exits and assist means. (*évacuation*)
- “external load” - means a load carried externally by an aircraft. (*charge externe*)
- “hoist” - an approved lifting and lowering device attached to the exterior of a helicopter and used for the embarking and disembarking of cargo and persons from/to a helicopter in flight. (*treuil*)
- “operations co-ordination” - means the exercise of authority by an air operator over it’s operating activities excluding operational control. (*coordination des opérations*)
- “rappelling” - an approved attaching system to a helicopter used for the quick disembarking from the cabin of a helicopter in flight. (*descent en rappel*)
- “vertical reference operations” - means placement or pick-up of a suspended helicopter external load requiring the pilot to continuously maintain view of the suspended load vertically from the cockpit. Also referred to as long-lining. (*manoeuvre à l’aide de repères verticaux*)
- “wide-body helicopter” - means a helicopter having an interior cabin width of 2m (6’7”) or more. (*hélicoptère gros porteur*)

DIVISION II - CERTIFICATION**722.07 Issuance or Amendment of an Air Operator Certificate**

- (1) The following constitutes an application for an Aerial Work Air Operator Certificate:
- (a) form 26-0440 - information required to determine the type of aerial work being applied for and the suitability of the base of operations, sub-bases, aircraft types to be operated, supervisory personnel and maintenance organization. The operator shall be able to demonstrate that operations are permitted at each base of operations. This will normally be done by providing written permission from the Local Airport Authority (LAA). Where the air operator can not obtain written permission and operations have not been denied in writing by the LAA, access to the aerodrome shall be demonstrated by other means such as facilities provided through a lease, contractual agreement etc. This form is to be signed by the person authorized by the air operator applicant to execute the application and shall be supported by resumes and statements of qualification for each required operations supervisory position;
 - (b) Maintenance Control Procedures;
 - (c) Company Operations Manual;
 - (d) Minimum Equipment List(s) (as applicable);
 - (e) Nomination for Company Check Pilot (as applicable); and
 - (f) Written confirmation of liability insurance coverage against risks of public liability, pursuant to subsection 606.02(8) of the CARs.
(amended 2006/06/30)

(2) Qualifications and Responsibilities of Operations Personnel**(a) Operations Manager****(i) Qualifications**

- (A) hold or have held the appropriate licence and ratings for which a pilot-in-command is required to hold for one of the aircraft operated by the air operator or have acquired not less than 2 years related flight operations experience with an air operator of a commercial air service or equivalent military experience; and
(amended 2004/12/01)
- (B) have demonstrated to the air operator knowledge with respect to the content of the operations manual, Air Operator Certificate and Operations Specifications and the provisions of the regulations and standards necessary to carry out the duties and responsibilities to ensure safety.

(ii) Responsibilities

The operations manager is responsible for safe flight operations. In particular, the responsibilities of the position include:

- (A) control of operations and operational standards of all aircraft operated;
- (B) operations co-ordination functions which impact on operational control (eg. maintenance, crew scheduling, load control, equipment scheduling);
- (C) contents of the air operator's Company Operations Manual;
- (D) the supervision of, and the production and amendment of, the Company Operations Manual;
- (E) training and qualifications of flight operations personnel;
- (F) liaison with the regulatory authority on matters concerning flight operations including any variation to the Air Operator Certificate;
- (G) liaison with any external agencies which may effect air operator operations;
- (H) ensuring that the air operator's operations are conducted in accordance with current regulations, standards and the Company Operations Manual;
- (I) ensuring that crew scheduling complies with flight and duty time regulations;
- (J) ensuring that all crew members are kept informed of any changes to applicable regulations and standards;
- (K) the receipt and actioning of any aeronautical information affecting the safety of flight;
- (L) dissemination of flight operations safety information;
- (M) qualifications of flight crews;
- (N) maintenance of a current operations library; and
- (O) ensuring that responsibilities for operational control functions are delegated to qualified personnel.

(b) Chief Pilot**(i) Qualifications**

(A) If the Air Operator Certificate authorizes:

- (I) VFR day only - hold a valid Airline Transport Pilot Licence or Commercial Pilot Licence for the category of aircraft operated;
- (II) VFR at Night - hold a valid Airline Transport Pilot Licence or Commercial Pilot Licence valid for night and a valid Instrument Rating for the category of

aircraft operated. Where the Air Operator Certificate authorizes VFR at night only without an instrument rating, the chief pilot need not be instrument rated;

(III) IFR - hold a valid Airline Transport Pilot Licence or Commercial Pilot Licence and a Valid Instrument Rating for the category of aircraft operated;

(B) if applicable, hold a type rating for one of the aircraft operated;

(C) have at least 500 hours of flight time, of which 250 hours were acquired within the preceding three years on the category of aircraft operated by the air operator;

(amended 2000/12/01)

(D) be qualified in accordance with the air operators training program to act as pilot-in-command on one of the types operated by the air operator;

(E) have demonstrated knowledge to the air operator with respect to the content of the operations manual, provisions of the regulations and standards, and if applicable, the company check pilot manual and standard operating procedures.

(ii) Responsibilities

The chief pilot is responsible for the professional standards of flight crew and in particular:

(A) developing standard operating procedures;

(B) developing or implementing all required crew member approved training programs;

(C) issuing directives and notices to the flight crews as required;

(D) the actioning and distribution of accident, incident, and other occurrence reports;

(E) the processing and actioning of any crew reports;

(F) the supervision of flight crews;

(G) assuming responsibilities delegated by the Operations Manager; and

(H) ensuring that duties are delegated to qualified individuals.

(c) Maintenance Organization

The person responsible for the maintenance control system shall be qualified in accordance with Section 726.03 of the Commercial Air Services Standard.

722.08 Contents of Air Operator Certificate

Navigation System Authorizations (refers to subparagraph 702.08(g)(vii) of the Canadian Aviation Regulations)

(amended 1998/09/01)

(1) Minimum Performance Capability for Long Range Area Navigation System

To be authorized for use through operation specifications specified in an Air Operator Certificate, a long range area navigation system shall meet the following minimum performance capability:

(amended 1999/09/01)

- (a) have a standard deviation of lateral track deviations of less than 6.3 nautical miles;
- (b) have a proportion of the total flight time spent by the aircraft 30 nautical miles or more from cleared track of less than 5.3×10^{-4} ;
- (c) have a proportion of the total flight time spent by aircraft at or between 50 and 70 nautical miles from the cleared track of less than 1.3×10^{-4} ; and
- (d) in paragraphs 722.08(2)(c) and (d) below, if a GPS receiver(s) provides the only means of long range navigation, then the requirements of FAA Document No. 8110.60, *GPS as a Primary Means of Navigation in Oceanic/Remote Operations* must be met.

(2) Authorizations

(a) Required Navigation Performance Capability (RNP) Airspace

The standard requirements for authorization to flight plan published high level fixed RNAV routes in Required Navigation Performance Capability (RNP) airspace, or to be accommodated by Air Traffic Control (ATC) on other routes using RNP separation criteria, are:

- (i) aeroplanes equipped with at least two independent navigation systems, one of which being a long range area navigation system; and
- (ii) flight crew training on operation of the long range area navigation system in accordance with training pursuant to subsection 722.76(15).

(b) Canadian Minimum Navigation Performance Specification (CMNPS) and RNP Airspace

The standard requirements for authorization to operate in Canadian Minimum Navigation Performance Specification (CMNPS) airspace, and to flight plan published high level fixed RNAV routes in Required Navigation Performance Capability (RNP) airspace, and to be accommodated by Air Traffic Control (ATC) on other routes using RNP separation criteria are:

- (i) aeroplanes with navigation equipment as follows:
 - (A) for aeroplanes operating only in domestic airspace on high level airways equipment in accordance with paragraph 605.18(j) of the *Canadian Aviation Regulations*;
 - (B) for aeroplanes operating only in domestic airspace on company approved routes or direct routes that begin and end within reception range of ground based nav aids, at

least two independent navigation systems, one of which being a long range area navigation system;

(C) for aeroplanes operating in CMNPS airspace other than on high level airways, company approved routes and direct routings that begin and end within the reception range of ground based nav aids, two independent long range navigation systems;

(ii) flight crew training on operation of the long range area navigation system(s) in accordance with training requirements set out in subsection 722.76(15) of these Standards.

(c) North Atlantic Minimum Navigation Performance Specification (NAT MNPS), CMNPS and RNP-C Airspace

The standard requirements for authorization to operate in North Atlantic Minimum Navigation Performance Specification (NAT MNPS) airspace, CMNPS airspace, to flight plan published high level fixed RNAV routes in Required Navigation Performance Capability (RNP-C) airspace, and to be accommodated by Air Traffic Control (ATC) on other routes using RNP-C separation criteria are:

(i) subject to clauses (A) and (B) aeroplanes shall be equipped with at least two independent long range area navigation systems.

(A) aeroplanes equipped with at least two independent navigation systems, one of which being a long range area navigation system, may be approved for NAT MNPS operations restricted to routes approved for aeroplanes with one long range RNAV system; and

(B) aeroplanes equipped with at least two independent navigation systems based on short range ground transmitters may be approved for NAT MNPS operations restricted to routes approved for aircraft with no long range RNAV capability; and

(ii) flight crew training on operation of long range area navigation systems in accordance with training requirements set out in subsection 722.76(15) of these Standards.

(d) Reduced Vertical Separation Minima (RVSM) Airspace
(amended 2003/03/01)

The standards for authorization to operate in Reduced Vertical Separation Minima (RVSM) airspace are:

(amended 2003/03/01)

(i) the aircraft shall be certified in accordance with the *ICAO/FAA Document 91-RVSM* and meet the other applicable technical requirements of *ICAO NAT DOC 001*,
(amended 2003/03/01)

(ii) the air operator shall comply with the *ICAO/FAA Document 91-RVSM* and meet the other applicable requirements of *ICAO NAT DOC 001*, and
(amended 2003/03/01)

(iii) the flight crew training shall be in accordance with the requirements of subsection 722.76(23).
(amended 2003/03/01)

(d) Reduced Vertical Separation Minima (RVSM) in NAT MNPS, CMNPS and RNPC Airspace

The standard requirement for authorization to operate in NAT MNPS Reduced Vertical Separation Minima (RVSM) airspace, CMNPS airspace, to flight plan published high level fixed RNAV routes in Required Navigation Performance Capability (RNP) airspace, and to be accommodated by Air Traffic Control (ATC) on other routes using RNP separation criteria is as follows:

- (i) the air operator and aeroplane shall comply with Minimum Aircraft System Performance Specifications (MASPS) and other requirements of ICAO NAT DOC 002 and ICAO/FAA Document 91-RVSM.

(3) Instrument Approaches - Global Positioning System (GPS)

(a) The standard requirements for authorization to fly instrument approach procedures using only GPS navigation information are:

- (i) an operational evaluation in accordance with paragraph 722.08(3)(b) has been completed by the Minister on each aircraft type/GPS/FMS model installation for which approach authorization is sought;
- (ii) an air operator has an approved flight crew training and qualifications program for use of the GPS/FMS system that meets the requirements of section 722.76; and
- (iii) standard operating procedures have been amended to reflect GPS approach operations and approved by the Minister (where required).

(b) The following items will be assessed in the operational evaluation prior to the approval of the operator's GPS approach standard operating procedures (where applicable) and training program. Identical installations of the same model of GPS in the same type of aircraft with the same operator do not need separate evaluations.

(i) Database

The geographical coverage area for the database shall be compatible with the type of operations conducted by the company. The air operator shall have procedures in place to ensure that the database will be updated in accordance with the appropriate data revision cycle. This shall include a contract with a database supplier and the inclusion, in the appropriate company manuals, of the person responsible for installing the updates in the aircraft. The company shall have a procedure in place for pilots to report database errors and for information on database errors to be passed on to other company pilots, the avionics manufacturer and the Minister.

(ii) Unit Installation and Operation

The handling and procedures associated with the GPS avionics shall be such that all operations required for GPS approach can be accomplished without an adverse impact

on normal crew duties and responsibilities. GPS related tasks shall not consume the attention of the pilot not flying (PNF) during critical phases of flight (i.e. between the time the aircraft turns inbound on the final approach course and the time the aircraft is established in the climb configuration on a missed approach).

(iii) Control Display Unit (CDU) and Course Deviation Indicator (CDI) / Distance Display

If the GPS/FMS control unit is not adequately accessible from each pilot position, or if GPS course deviation and distance displays are not within the primary field of view at both pilot stations, air operators shall designate in the standard operating procedures the position that the pilot flying (PF) and pilot not flying (PNF) are required to occupy during GPS approach for that type of installation. Aircraft types that are certified for operation by two crew members shall have GPS course deviation and distance displays at each pilot station. An Operation Specification authorizing GPS approaches shall not be issued unless the PNF has a means acceptable, in the Minister's opinion, of monitoring the PF during an approach.

(iv) Distance Display on the HSI

Installations where GPS guidance information (course tracking, To/From and NAV flags) are switched onto the HSI for display, but the DME distance information is not switched out (i.e. DME distance rather than GPS distance is displayed continuously on the HSI even when GPS source is selected to HSI), shall require air operators, in their standard operating procedures for GPS approach to deselect other NAV/DME sources to eliminate distance displays in the pilot's primary field of vision not related to the approach procedure being flown.

(v) Annunciation

Responses to system annunciation (including Receiver Autonomous Integrity Monitoring (RAIM) warnings), the means of selecting GPS track information to the CDI/HSI and the means of coupling GPS steering information to the aircraft automatic flight control system shall be compatible with the safe operation of the aircraft type/category. Standard operating procedures shall specify the procedure whereby the control unit is programmed, approach waypoints are verified against an independent source, approach mode is armed, and cockpit NAV source and AFC guidance source switches are selected and verified. Any switch selection or programming errors that the Minister believes are likely to occur and that could lead to a serious incident shall, if possible, be identified and addressed in training and in the standard operating procedures. Otherwise, the installation shall not be approved for approach use.

(vi) Airborne Evaluation

The Minister shall observe the pre-flight and in-flight operation of the unit on at least one GPS approach and missed approach. If the PF is allowed to occupy either seat during GPS approaches, then one approach from each pilot position shall be demonstrated. An airborne evaluation in an aircraft must take place under VFR. Emphasis will be on crew co-ordination, pilot workload (PF and PNF), and switch selections.

Special Weather Minima Authorizations (refers to subparagraph 702.08(g)(v) of the Canadian Aviation Regulations)

(amended 1999/09/01)

(4) Takeoff Minima RVR 1,200 feet (¼ mile) - Turbine Aeroplanes With Certified Engine-Out Take-Off and Climb Performance

(amended 1999/09/01)

For the purposes of paragraph 602.126(1)(a) of the *Canadian Aviation Regulations*, the operation specifications for the take-off in IMC of a turbine-powered aeroplane with certified engine-out take-off and climb performance, shall be a reported visibility RVR of 1,200 feet (¼ mile), provided that:

(amended 2001/06/01)

- (a) the Company Operations Manual contains detailed guidance on how to determine departure one engine inoperative climb gradient and obstacle clearance;
- (b) a take-off alternate which meets the following distance criteria is specified in the flight plan:
 - (i) within 60 minutes flying time for twin-engined turbine powered, non-ETOPS aeroplanes;
 - (ii) within 120 minutes flying time for twin-engined ETOPS aeroplanes or as otherwise limited by the air operators ETOPS authority; or
 - (iii) within 120 minutes flying time for 3 and 4 engined aeroplanes;

Information Note:

The distances expressed in terms of flight time in (b) above are based on normal cruising speed in still air with one engine inoperative.

- (c) the runway is equipped as detailed in the manual of *Aerodrome Standards and Recommended Practices* (TP 312) with serviceable and functioning high intensity runway lights or runway centre line lights or with runway centre line markings that are plainly visible to the pilot throughout the take-off run;
- (d) the pilot-in-command is satisfied that the required RVR 1,200 feet (¼ mile) visibility exists, before commencing take-off, for the runway to be used;

(e) the pilot-in-command and second-in-command attitude instruments (artificial horizons) on the aeroplane incorporate pitch attitude index lines in appropriate increments above and below the zero pitch reference line to at least 15 degrees, and are capable of ensuring ready depiction of total aeroplane attitude. An approved failure warning system which will immediately detect essential instrument and equipment failures or malfunctions is installed and is operative;

Information Note:

For the purpose of reduced visibility take-offs, essential instruments are defined as attitude indicators, directional gyros and HSI's.

(f) the chief pilot has certified in the document certifying qualifications and proficiency that the pilot-in-command is competent to conduct an RVR 1,200 feet (¼ mile) takeoff; and

(g) the pilot-in-command has at least 100 hours of pilot-in-command experience on the aeroplane type, except that a pilot-in-command converting onto an aeroplane type similar to that on which he/she had been maintaining pilot-in-command qualifications at these weather limits for at least 90 days prior to conversion may be authorized by the air operator to apply these take-off minima.

Information Note:

For the purposes of paragraph (f) above, an aeroplane type is 'similar' to another when the conversion is from turbo-propeller to turbo-propeller or from turbo-jet to turbo-jet.

(5) Takeoff Minima RVR 1,200 feet (¼ mile) - Turbine Aeroplanes without Certified Engine-out Take-off and Climb Performance (amended 2001/06/01)

For the purposes of paragraph 602.126(1)(a) of the *Canadian Aviation Regulations*, the operation specifications for the take-off in IMC of a turbine-powered aeroplane without certified engine-out take-off and climb performance, shall be a reported visibility RVR of 1,200 feet (¼ mile), provided that:

(a) the Company Operations Manual contains detailed guidance on how to determine departure single engine climb gradient and obstacle clearance;

(b) a take-off alternate within 60 minutes flying time based on still air normal cruising speed is specified in the flight plan. The take-off alternate aerodrome weather minima shall meet the alternate requirements set out in the *Canada Air Pilot*;

(c) the take-off weight of the aeroplane does not exceed the weight determined from the Aircraft Flight Manual that, considering the runway characteristics and ambient weather conditions, meets the following requirements:

- (i) the required Accelerate-Stop Distance does not exceed Accelerate-Stop Distance Available (ASDA); and
- (ii) the required engine-out take-off distance does not exceed Take-off Distance Available (TODA);

INFORMATION NOTE:

Where the manufacturer does not provide data for single-engine take-off distance, but provides data for engine-out climb in the take-off configuration, the aeroplane weight shall permit a positive rate of climb using the configuration and speed at lift-off.

(d) the runway is equipped as detailed in the *Manual of Aerodrome Standards and Recommended Practices* (TP 312) with serviceable and functioning high intensity runway lights or runway centre line lights or with runway centre line markings that are plainly visible to the pilot throughout the take-off run;

(e) the pilot-in-command is satisfied that the required RVR 1,200 feet (¼ mile) visibility exists for the runway to be used, before commencing take-off;

(f) the pilot-in-command and first officer attitude instruments (artificial horizons) on the aeroplane incorporate pitch attitude index lines in appropriate increments above and below the zero pitch reference line to at least 15 degrees, and are capable of ensuring ready depiction of total aeroplane attitude. An approved failure warning system which will immediately detect essential instrument and equipment failures or malfunctions is installed and operative. For the purpose of reduced visibility take-offs, essential instruments are defined as attitude indicators, directional gyros and HSI's;

(g) the flight crew members have completed annual training in a simulator for the type, certificated to Level B or higher, during which RVR 1,200 take-offs and rejected take-offs are practiced;

(h) the Chief Pilot has certified in the document certifying qualifications and proficiency that the pilot-in-command is competent to conduct an RVR 1,200 feet (¼ mile) visibility take-off; and

(i) the pilot-in-command has at least 100 hours of pilot-in-command experience on the aeroplane type.

**722.09 General Conditions of Air Operator
Certificate****Operational Support Services and Equipment Standard**

Operational support services and equipment will be dependent on the Aerial Work Operations being conducted, types of aircraft authorized and scope of operation. Support services and equipment shall include as applicable:

- (a) aircraft servicing facilities and ground handling equipment;
- (b) aerial work equipment to safely conduct the aerial work operation;
- (c) operational control and communications facilities;
- (d) flight operations publications including the *Aeronautics Act*, *Canadian Aviation Regulations* and applicable standards, *Maintenance Control Manual*, *Canada Flight Supplement*, *Aeronautical Information Publication* and, as applicable, Aircraft Flight Manuals, Aircraft Operating Manuals, Standard Operating Procedures, Minimum Equipment Lists and appropriate maps and charts;
- (e) weather availability requirements;
- (f) ground de-icing / anti-icing program facilities; and
- (g) provisions for handling dangerous goods.

DIVISION III - FLIGHT OPERATIONS**722.12 Operational Control System****Operational Control System Standard**

Operations conducted under Subpart 702 of the *Canadian Aviation Regulations* require a Type D operational control system. Another organization may be contracted to exercise operational control on behalf of an air operator.

(1) General**(a) Application**

For all operations under Aerial Work Operations.

(b) Responsibility and Authority

Operational control is delegated to the pilot-in-command of a flight by the Operations Manager, who retains responsibility for the day to day conduct of flight operations.

(c) Centres

Current information on the location of the air operator's aircraft shall be maintained at the main base of operations, sub-base or where appropriate, from the location from which the flight following is being conducted.

(d) Communications

Each aircraft shall be equipped with serviceable and functioning communications equipment that permits the pilot-in-command to communicate with a ground radio station for the purpose of flight following with the air operator. Such a ground station may be operated by the government, the air operator or a private agency.

(e) On Duty

A person qualified and knowledgeable in the air operator's flight alerting procedures shall be on duty or available when IFR or VFR at night flight operations are being conducted.

(2) Flight Following

Flight Following for a Type D system is the monitoring of a flight's progress and the notification of appropriate air operator and search and rescue authorities if the flight is overdue or missing.

Flight Following procedures and the standards of qualifications for the individual performing this function shall be described in the air operator's Company Operations Manual.

(a) Each flight shall be conducted under an IFR Flight Plan, VFR Flight Plan or Flight Itinerary as appropriate.

(b) The pilot-in-command is responsible for flight watch but shall be supported by an air operator Flight Following System that shall monitor the progress of each IFR flight or VFR at night flight from its commencement to its termination, including any intermediate stops. The person performing the flight following function, who may be the same as in paragraph 1(e) above, shall be delegated to do so by the operations manager.

(c) The pilot-in-command shall be responsible for passing messages concerning landings and departures from point of origin, at enroute stops and from the final destination in order to satisfy the requirements of paragraph 2(b) above.

722.14 Operational Flight Plan Standard**(1) Application**

VFR at night flights operated within an aerial work zone for the purpose of conducting an aerial work operation and day VFR flights are not required to be operated under an operational flight plan.

(2) Minimum Content of an Operational Flight Plan, VFR at Night and IFR

- (a) air operator name;
- (b) date;
- (c) aircraft registration;
- (d) aircraft type and model;
- (e) type of flight - IFR, VFR at night;
- (f) pilot-in-command name;
- (g) departure aerodrome;
- (h) destination aerodrome;
- (i) alternate aerodrome, if applicable;
- (j) routing to destination by successive navigational way points with associated tracks for each;
- (k) routing to alternate aerodrome;
- (l) planned cruise altitudes to destination and alternate, if applicable;
- (m) estimated time enroute and, if applicable, to alternate;
- (n) fuel burn enroute and from destination to alternate;
- (o) fuel as applicable for the type of flight plan:
 - (i) taxi;
 - (ii) destination;
 - (iii) alternate;
 - (iv) contingency; or
 - (v) holding reserve;
- (p) weights
 - (i) total fuel on board;
 - (ii) zero fuel weight;
 - (iii) planned maximum take-off weight;
- (q) number of persons on board as amended by final load figures; and
- (r) signature of pilot-in-command or means of certifying acceptance.

The operational flight plan shall permit the flight crew to record the fuel state and the progress of the flight relative to the plan.

The air operator shall specify, in its Company Operations Manual, how formal acceptance of the operational flight plan by the pilot-in-command shall be recorded.

722.16 Carriage of Persons

The standards for authorization to carry persons other than flight crew members and persons essential during flight are:

- (a) the person is a flight crew member trainee, is a person undergoing training for essential duties during flight or is an air operator employee aircraft maintenance technician;
- (b) the person is a fire fighter or fire control officer being carried within a forest fire area;
- (c) the person is being carried to an aerial work site, performs an essential function in connection with the aerial work operation and is necessary to accomplish the aerial work operation;
- (d) during helicopter external load operations, persons not essential during flight are carried only in conjunction with a Class D load which complies with subsection 702.21(1) of the *Canadian Aviation Regulations*, except for crew members undergoing training, or fire fighters carried only in conjunction with a Class B load consisting of equipment necessary to fight fires within a forest fire area;
(amended 1998/09/01)
- (e) aircraft equipment requirements comply with Subpart 605 of the *Canadian Aviation Regulations*, Division II - Aircraft Equipment Requirements for aircraft seats, restraint system requirements and shoulder harness requirements, as applicable; and
- (f) persons are safety briefed in accordance with Section 722.23 of the Aerial Work Standard.

Note:

(amended 1998/09/01)

Parachutists and jumpmasters are considered to be essential during flight and do not require an Operations Specification under subparagraph 702.08 (g) (iv) of the Canadian Aviation Regulations.

**722.17 VFR Flight Minimum Flight Visibility -
Uncontrolled Airspace**

(1) Aeroplanes

The standard for reduced VFR visibility limits of one mile in uncontrolled airspace for aeroplanes is as follows:

(a) Aeroplane Equipment

The aeroplane shall be equipped with the following:

(amended 2000/12/01)

(i) an artificial horizon;

(amended 1998/09/01)

(ii) a directional gyro or gyro compass; and

(amended 1998/09/01)

(iii) a Global Positioning System (GPS) navigation receiver.

(amended 1998/09/01)

(b) Pilot Experience

Before conducting operations at reduced visibility, pilots shall have achieved at least 500 hours of experience in Part VII or operations in the same category and class of aeroplane for which the authority is sought that, in the opinion of the Minister, are equivalent to such experience.

(amended 2000/12/01)

(c) Airspeed and Configuration for Operation in Reduced Visibility

Aeroplanes shall be operated at a speed such that obstacles can be seen and avoided.

Aeroplane configuration for operations in reduced visibility shall conform to the Aircraft Flight Manual recommendations.

(d) Pilot Training

Pilots shall receive training as follows:

(amended 2000/12/01)

(i) initially and every three years thereafter, pilot decision making training which shall include the following topics:

(amended 2000/12/01)

(A) the decision making process, including modules on factors which affect good judgement;

(amended 2000/12/01)

(B) human performance factors, including modules on physical, psychological and, physiological phenomena and limitations; and

(amended 2000/12/01)

(C) human error countermeasures and good airmanship;

(amended 2000/12/01)

- (ii) one hour initial flight training and one hour annual recurrent flight training in basic instrument flying manoeuvres and flight at reduced airspeed; and
- (iii) initial training and annual recurrent training in the use of all equipment specified in subsection (1) above, and in all procedures specified in the Company Operations Manual for low visibility operations.

(e) Company Operations Manual

The Company Operations Manual shall contain the following information:

(amended 1998/09/01)

- (i) a company established minimum safe operational IAS and configuration for reduced visibility operations for each aeroplane type for which this authority is sought; and
- (ii) company low visibility operational procedures and considerations including, but not limited to:

(amended 1998/09/01)

- (A) wind;
- (B) gross weight and weather considerations;
- (C) route / terrain knowledge and/or restrictions (availability of forced landing areas, potential for white-out, etc.);
- (D) time of day restrictions (e.g. no low visibility operations at dawn or twilight); and
- (E) communications.

(2) Helicopters

The standard for reduced VFR visibility limits of one half mile in uncontrolled airspace for helicopters is as follows:

(a) Pilot Experience

Before conducting operations in reduced visibility, pilots shall have achieved at least 500 hours of pilot-in-command experience in helicopters.

(amended 1998/09/01)

(b) Airspeed for Operation in Reduced Visibility

(amended 1998/09/01)

Helicopters shall be operated at a reduced air speed that will provide the pilot-in-command adequate opportunity to see and avoid obstacles.

(c) Pilot Training

The pilot shall receive training as follows:

(amended 2000/12/01)

(i) initially and every three years thereafter, pilot decision making training which shall include the following topics:

(amended 2000/12/01)

(A) the decision making process, including modules on factors which affect good judgement;

(amended 2000/12/01)

(B) human performance factors, including modules on physical, psychological and, physiological phenomena and limitations; and

(amended 2000/12/01)

(C) human error countermeasures and good airmanship;

(amended 2000/12/01)

(ii) initial and annual recurrent flight training in procedures specified in the Company Operations Manual for operations in reduced visibility.

(amended 1998/09/01)

(d) Company Operations Manual

(amended 1998/09/01)

The Company Operations Manual shall contain low visibility operational procedures and pilot decision making considerations for operation in visibility conditions of less than one mile which shall include, but not be limited to:

(i) gross weight;

(ii) wind;

(iii) weather;

(iv) route / terrain;

(v) time of day;

(vi) communications; and

(vii) the potential for white-out.

722.18 Night, VFR OTT and IFR Operations

(1) Towing operations VFR at night are subject to the following standards:

(a) operations are conducted in compliance with Section 602.14 of the *Canadian Aviation Regulations* over built-up areas unless otherwise authorized, taking account of any hazards to persons or property on the surface in event of an inadvertent release of the tow;

(b) the tow is jettisonable;

- (c) the tow pick-up and drop-off aerodrome departure and approach flight paths do not require overflight of a built-up area;
 - (d) the tow is lighted so as to be visible to other air traffic at night;
 - (e) only flight crew members and persons with essential in-flight duties are carried;
 - (f) the pilot-in-command has at least 10 hours experience in towing operations within the previous 6 months;
 - (g) the tow has been flown previously under day VFR and shown to have no hazardous flight characteristics;
 - (h) the object being towed is not a glider unless otherwise specifically authorized, taking into account proximity to a lighted glider recovery aerodrome;
 - (i) flight operations are coordinated with the appropriate ATC unit; and
 - (j) operational restrictions and procedures are included in the air operator's Company Operations Manual.
- (2) Towing operations VFR OTT are subject to the following standards:
- (a) flights are conducted in compliance with Section 602.15 of the *Canadian Aviation Regulations* for VFR OTT flight;
 - (b) the tow is jettisonable;
 - (c) VFR OTT towing is conducted only on pre-planned routes or within pre-planned areas established by the air operator which ensure that no hazard is created for persons or property on the surface;
 - (d) the tow has been flown previously under day VFR and shown to have no hazardous flight characteristics;
 - (e) flights are operated under conditions which will permit a descent under VMC in event of an aircraft or tow malfunction;
 - (f) flight operations are coordinated with the appropriate ATC unit; and
 - (g) operational restrictions and procedures are included in the air operator's Company Operations Manual.
- (3) Towing operations under IFR are not authorized.

(4) Helicopter Class B or Class C external load operations at night are subject to the following standards:

- (a) the helicopter is equipped with a landing/search light capable of being controlled by the pilot and controllable through 45 degrees either side of the forward longitudinal axis of the helicopter;
- (b) the external load work zone, load pick-up site and load drop site is sufficiently lighted to permit the pilot to clearly discern the load on the ground, ground workers, surface obstructions and the perimeter of the external load work zone;
- (c) the load attaching hook is fluorescent-painted or otherwise marked to make it discernible to ground workers in the external load work zone;
- (d) the external load work area approach routes, departure routes and transit routes between work zones are pre-planned to ensure safe obstacle clearance;
- (e) safe VMC transit altitudes and routes are established;
- (f) the air operator has coordinated the external load operation with the appropriate ATC unit; and
- (g) the air operator's Company Operations Manual content includes operational restrictions and procedures.

(5) Helicopter Class D external load operations at night are subject to the following standards:

- (a) the helicopter is equipped with a landing/search light capable of being controlled by the flight crew and controllable through 45 degrees either side of the forward longitudinal axis of the helicopter;
- (b) the operation complies with the requirements of Section 702.21(1) of the *Canadian Aviation Regulations*;
- (c) the helicopter is equipped with a radio altimeter having an altitude alert function;
- (d) the load pick-up site and load delivery site, as applicable, are illuminated such that the flight crew and essential persons on board the helicopter can clearly discern the perimeter of the site and obstructions;
- (e) flight crew members and essential persons have been trained in accordance with Section 722.76 of the *Commercial Air Services Standards*;
- (f) persons are not transported externally between points at night; and
- (g) the air operator's Company Operations Manual content includes operational requirements.

(6) Helicopter Class B external load VFR OTT is subject to the following standards:

(a) the helicopter is a multi-engine helicopter operated in day VFR OTT conditions at a combined aircraft and external cargo weight to permit either:

- (i) continuation of the flight at the required enroute altitude with the external load attached with one engine inoperative; or
- (ii) descent with one engine inoperative under VMC from OTT flight with the external load attached to permit safe jettisoning of the external load;

(b) flights are not operated over built-up or populated areas where loss of the external load would create a hazard to persons or property on the surface; and

(c) flights are coordinated with the appropriate ATC unit and advised that the helicopter will be carrying an external load.

(7) Helicopter external load under IFR is subject to the following standards:

(a) the helicopter is certified as a Transport Category A Rotorcraft;

(b) the helicopter and external load combination is airworthiness approved for IFR;

(c) only flight crew members and persons essential during flight are carried;

(d) no persons are carried externally;

(e) flights are coordinated with the appropriate ATC unit and advised that the helicopter will be carrying an external load; and

(f) the air operator's Company Operations Manual content includes operational restrictions and procedures.

(8) Dispersing of products VFR at night is subject to the following standards:

(a) operations are conducted in VFR conditions which provide for a discernable natural horizon;

(b) the dispersing area has been surveyed under day conditions and obstructions marked in a manner to ensure their recognition at night;

(c) the pilot is familiar with the dispersing flight path and obstructions prior to conducting night operations;

(d) the aircraft is equipped with an approved light system capable of illuminating obstacles on the flight path at a distance where the aircraft could avoid the obstacle; and

(e) the air operator's Company Operations Manual content includes operational requirements.

(9) Dispersing of products in VFR OTT or in IFR flight for the purpose of aerial weather altering shall be conducted in accordance with the following standards:

- (a) the air operator coordinates the operation with the applicable ATC unit;
- (b) no hazard is created to persons or property on the surface; and
- (c) the air operator's Company Operations Manual content includes operational requirements.

(10) Single-engine aircraft VFR OTT is subject to the following standards:

- (a) the flight is operated under conditions allowing descent in VMC if its engine fails; and
- (b) flights are conducted in accordance with the requirements of Section 602.116 of the *Canadian Aviation Regulations*.

(11) Single-engine (SE) aircraft operation VFR at night or in IFR is subject to the following standards:

(a) VFR at night SE aircraft

(amended 1998/09/01)

- (i) no persons other than flight crew members, persons essential during flight and parachutists, where the Air Operator Certificate authorizes parachuting, are carried unless the operation complies with paragraph (c) below; and
- (ii) aircraft equipment requirements, pilot qualifications and restrictions are included in the Company Operations Manual.

(b) IFR SE Aircraft

- (i) no persons other than flight crew members are carried unless the operation complies with paragraph (c) below ;

(amended 1998/09/01)

- (ii) flights are not conducted over Designated Mountainous Regions as defined in the *Designated Airspace Handbook* (TP 1820); and
- (iii) aircraft equipment requirements, pilot qualifications and restrictions are included in the Company Operations Manual.

(c) Persons other than flight crew members and persons essential during flight may be carried VFR at night or in IFR where the aircraft is an aeroplane and the operation complies with the following standards:

(i) General

- (A) only factory built, turbine-powered aeroplanes are permitted;
- (B) the turbine engine of the aeroplane type must have a proven Mean Time Between Failure (MTBF) of 0.01/1000 or less established over 100,000 hours in service;

(C) no flight may include sectors over Designated Mountainous Regions 1 and 5 as defined in the *Designated Airspace Handbook* (TP 1820); and

(D) pilot training in accordance with section 722.76.

(ii) Aeroplane Equipment Requirements

(A) two attitude indicators which are powered separately and independently from each other;

(B) two independent power generating sources, either of which is capable of sustaining essential flight instruments and electrical equipment;

(C) an auto-ignition system or, alternately, the Company Operations Manual must specify that continuous ignition must be selected “ON” for take-off, landing and flight in heavy precipitation;

(D) a chip detector system to warn the pilot of excessive ferrous material in the engine lubrication system;

(E) a radar altimeter; and

(F) a manual throttle which bypasses the governing section of the fuel control unit and permits continued unrestricted operation of the engine in the event of a fuel control unit failure.

(12) Operation of aircraft VFR at night with persons other than flight crew members on board where the pilot-in-command does not have an appropriate instrument rating is subject to the following standards:

(a) no persons other than flight crew members and persons essential during flight are carried;

(b) the area overflown is illuminated by lights on the surface to ensure visual surface reference and conditions provide for a discernable horizon;

(c) flights are operated on pre-planned plotted routes and the pilot-in-command is familiar with navigation procedures; and

(d) aircraft equipment requirements, pilot qualifications and restrictions are included in the Company Operations Manual.

722.19 Entering or Leaving a Helicopter in Flight

Authorization to permit a person to enter or leave a helicopter in flight other than by external load attaching means is subject to the following standards:

- (a) operations are conducted under day VFR conditions while the helicopter maintains a stabilized hover;
- (b) the longitudinal and lateral centre of gravity shall be calculated for embarking and disembarking operations and shall not exceed the limitations of the applicable flight manual. The operating weight shall be calculated and shall not exceed the applicable weight/attitude/temperature (WAT) hover performance charts for the helicopter type and configuration at the operating altitude;
- (c) persons to be embarked or disembarked have been instructed on related hazards and techniques;
- (d) crew members shall be trained in accordance with Section 722.76 of the *Commercial Air Services Standards*;
- (e) any equipment or cargo to be loaded or unloaded shall be secured to prevent shifting in flight except during loading and unloading. Cargo or equipment shall not be loaded or unloaded from a baggage compartment remote from the main cabin unless the applicable centre of gravity calculation is completed and cargo handlers have been instructed on procedures; and
- (f) the air operator's Company Operations Manual content includes embarking and disembarking operational procedures, briefing procedures and crew member training requirements.

722.20 Aircraft Operating Over Water

Authorization to operate a land aircraft over water beyond a point where the land aircraft could reach shore in event of an engine failure pursuant to Section 702.20 of the *Canadian Aviation Regulations* is available for helicopters only.

(1) The standards for authorization to operate a helicopter configured as a land aircraft over water are:

- (a) the helicopter is equipped with an approved emergency flotation kit and operated in accordance with the *Emergency Flotation Kit Flight Manual Supplement*;
- (b) when enroute over water, the helicopter is operated at an altitude that will provide adequate time for full inflation of the flotation devices prior to water contact in event of an engine failure;
- (c) life preservers are carried for each person on board and stowed within reach of each person carried when seated with his or her seat belt fastened.

(d) flights conducted over water more than 15 minutes at normal cruising speed from shore or from a suitable aerodrome when carrying persons other than flight crew members shall be capable of direct air-ground flight following communications; and

(e) the air operator's Company Operations Manual content includes equipment requirements, procedures and restrictions.

(2) A helicopter may be operated over water configured as a land aircraft without the helicopter being equipped with an emergency flotation kit provided:

(a) the helicopter is being operated for the purpose of fire suppression, fish stocking or power line inspection and surveillance;

(amended 2000/06/01)

(b) only persons essential during flight are carried and have been instructed in water ditching procedures and evacuation;

(c) life preservers are carried for each person on board and stowed within reach of each person carried when seated with his or her seat belt fastened; and

(d) the air operator's Company Operations Manual content includes procedures and restrictions.

722.21 Helicopter Class D External Loads

(1) The standards for authorization to operate a helicopter to carry a Class D helicopter external load are:

(a) the helicopter is equipped to permit direct radio intercommunication among crew members;

(b) the personnel carrying device is airworthiness approved for the carriage of human external loads;

(c) the load is jettisonable if it extends below the landing gear;

(d) the air operator has applicable one engine inoperative performance charts for the operating weight and density altitude at which the Class D external load operation is to be conducted. Performance charts may take account of windspeed providing windspeed is 10 knots or more;

(e) the air operator's Company Operations Manual includes operational requirements, operational procedures and air operator employee qualification and training requirements.

(2) The standards for authorization to operate a helicopter to carry a Class D helicopter external load using a single-engine helicopter or a multi-engine helicopter unable to comply with one engine inoperative requirements are:

(a) where the load does not extend below the landing gear:

(i) the helicopter is equipped to permit direct electronic or visual communication among crew members;

(amended 1998/09/01)

(ii) the personnel carrying device is airworthiness approved for the carriage of human external loads;

(iii) the helicopter is turbine powered and equipped, where approved for the type, with an auto-ignition system and a detector system to warn flight crew members of excessive ferrous material in the engine(s);

(iv) only flight crew members and persons essential during flight are carried; and

(v) the air operator's Company Operations Manual includes operational requirements, operational procedures and air operator employee qualification and training requirements;

(b) where the load extends below the landing gear:

(i) the helicopter is equipped to permit direct radio intercommunication among crew members;

(ii) the personnel carrying device is airworthiness approved for the carriage of human external loads;

(iii) the load is jettisonable;

(iv) the helicopter is turbine powered and equipped, where approved for the type, with an auto-ignition system and a detector system to warn flight crew members of excessive ferrous material in the engine(s);

(v) only flight crew members and persons essential during flight are carried;

(vi) persons are transported externally between geographical points only to the nearest suitable landing site;

(vii) the authorization is for the purpose of law enforcement operations, forest fire suppression operations, urban fire fighting operations or rescue operations;

(viii) the air operator has a formal written agreement from the user of the service and the agreement stipulates that only suitably trained and qualified persons will be assigned; and

(ix) the air operator's Company Operations Manual includes operational requirements, operational procedures and air operator employee qualification and training requirements.

(3) Authorization may be granted for deviation from the standards of 722.21(1) and (2) for the Production of Commercial Motion Pictures and Television filming provided:

(a) the aircraft is operated within approved limitations;

(b) a co-ordinated plan for each complete operation is developed;

(c) all persons involved are knowledgeable of equipment to be used and pre-flight briefed; and

(d) only flight crew members and persons essential during flight are carried.

(4) Where helicopter Class D External Load Operations are to be conducted for the purpose of providing a rescue service the following standards shall apply.

(a) Pilot Experience

Pilots-in-command for rescue service operations shall have achieved:

(i) at least 2,000 hours total helicopter pilot flight time;

(ii) at least 200 hours on the aircraft type which the pilot is to fly on initial assignment to rescue operations and at least 25 hours on types to be used thereafter;

(iii) at least 1,000 hours experience in the operational area if rescue services are to be conducted in Designated Mountainous Areas 1 or 2 as defined in the *Designated Airspace Handbook* (TP 1820); and

(iv) have completed training for Class D load operations in accordance with section 722.76.

(b) Rescue Service Operations Control

A close working relationship is required between the air operator and the emergency response user organization to ensure coordinated proficiency and mission safety. Terms of reference shall be documented in a written agreement and will define the following:

(i) responsibility of pilot-in-command and rescue specialist(s);

(ii) required operational capabilities and scope of operation;

(iii) coordinated rescue mission standard operating procedures;

- (iv) mission authorization and control process, including communication procedures; and
- (v) coordinated air operator and emergency response user agency training program on at least an annual basis.

722.22 Built-up Area and Aerial Work Zone

(1) For air operator authority to operate an aircraft over a built-up area at altitudes and distances less than those specified in Section 602.14 of the *Canadian Aviation Regulations*, or to conduct a take-off, approach or landing within the built-up area of a city or town, an aerial work zone plan shall be submitted to the Transport Canada Aviation Regional Office in the region in which the flights are to take place at least five working days in advance of the operation and include:

(amended 2005/06/01)

(a) certification that the governing municipality has been informed of the proposed operation;

(amended 1998/09/01)

(b) purpose of the flights;

(c) dates, alternate dates and proposed time of day of the operation;

(d) location of the operation;

(e) type of aircraft to be used;

(f) altitudes and routes to be used depicted on a map of the area;

(g) procedures and precautions to be taken to ensure that no hazard is created to persons or property on the surface including locations of forced landing areas in the event of an emergency; and

(amended 1998/09/01)

(h) name of the responsible air operator person to contact.

(2) For air operator authority to operate a helicopter carrying a jettisonable external load over a built-up area or to establish an aerial work zone within a built-up area, an aerial work zone plan shall be submitted to the Transport Canada Aviation Regional Office in the region in which the operation is to take place at least five working days in advance of the operation and include:

(a) certification that the governing municipality has been informed of the proposed operation;

(amended 1998/09/01)

(b) purpose of the operation;

(c) dates, alternate dates and proposed time of day of the operation;

(d) location of the operation;

- (e) type of helicopter to be used, description of loads to be carried and approximate number of loads;
- (f) altitudes and routes to be used, location and size of the proposed work zone depicted on a map of the area;
- (g) aerial work zone security arrangements and security arrangements for areas to be overflown to ensure that no hazard is created to persons or property;
- (h) if external load operations are to be conducted to roof tops, safety precautions to be taken in event of a forced landing onto the roof or load penetration through the roof; and
- (i) name of contact person designated by the air operator.

(amended 1998/09/01)

(3) For operating certificate authority, the air operator shall submit an application providing the above information as applicable, show a requirement for operating certificate authority and amend its Company Operations Manual to include the routes and conditions for their use.

722.23 Briefing of Persons Other Than Flight Crew Members

(1) The standard for a safety briefing is:

- (a) the safety briefing shall consist of an oral briefing provided by a flight crew member or by audio or audiovisual means and include the following information as applicable to the aircraft, aircraft configuration, equipment and operation:
 - (i) prior to boarding, procedures for embarking and disembarking when engines are running and when rotors are running;
 - (ii) when and how carry-on baggage and cargo is to be loaded, secured and unloaded;
 - (iii) fastening, unfastening and use of safety belts and safety harnesses, specifying when they must be fastened;
 - (iv) the proper positioning of seats for take-off and landing;
 - (v) the location of normal and emergency exits, how they are marked and how they operate;
 - (vi) the requirement to obey flight crew instructions;

(vii) the location, access to and use of emergency equipment, including the emergency locator transmitter, fire extinguisher, life preservers, liferafts, survival equipment and first aid kit; and

(viii) aircraft evacuation procedures, water ditching procedures, procedures if the aircraft is configured with external fixtures and, where applicable to wide-body helicopters, the method of egress in event of a roll over accident by use of the under seat frame of the transverse cabin seats as a ladder for egress.

(2) Where no additional persons have embarked for subsequent take-offs on the same day, the take-off briefing may be omitted provided a crew member has verified that all carry-on baggage and cargo is properly stowed, safety belts and harnesses are properly fastened and seats properly positioned.

(3) The safety briefing need not be provided if the pilot-in-command has ensured that the person has completed a currently valid training program covering the safety briefing requirements for the aircraft.

DIVISION IV - AIRCRAFT PERFORMANCE - OPERATING LIMITATIONS

Reserved

DIVISION V - AIRCRAFT EQUIPMENT REQUIREMENTS

Reserved

DIVISION VI - EMERGENCY EQUIPMENT

Reserved

DIVISION VII - PERSONNEL REQUIREMENTS

722.65 Flight Crew Member Qualifications

(1) Pilot Proficiency Check

(a) The pilot proficiency check shall be conducted in accordance with Schedule I for aeroplanes or with Schedule II for helicopters as applicable.

(b) A pilot proficiency check shall be conducted in a manner that enables the pilot to demonstrate the knowledge and the skill respecting:

(i) the aircraft, its systems and components;

(ii) proper control of airspeed, direction, altitude, attitude and configuration of the aircraft, in accordance with the procedures and limitations set out in the aircraft

operating manual where applicable, the Aircraft Flight Manual, the air operator's Company Operations Manual, the air operator's standard operating procedures, the check list, and any other information relating to the operation of the aircraft type;

(iii) departure, enroute and arrival instrument procedures, if applicable; and

(iv) adherence to approved procedures.

(c) Each manoeuvre or procedure within a phase of flight specified in the applicable pilot proficiency check schedule shall be performed in the aircraft or approved synthetic flight training device (FTD).

(d) A pilot-in-command check shall be completed in the seat normally occupied by the pilot-in-command and a second-in-command check shall be completed in the seat normally occupied by the second-in-command.

(e) A Transport Canada inspector or an approved company check pilot shall determine whether a person has demonstrated the knowledge and the skill in accordance with the following factors:

(i) the pilot's adherence to approved procedures; and

(ii) the pilot's qualities of airmanship in selecting a course of action.

(f) During the pilot proficiency check, the person conducting the check may request any manoeuvre or procedure, from the applicable Schedule, required to determine the proficiency of the candidate.

(g) Where a pilot successfully completes the full pilot proficiency check set forth, the pilot successfully completes the flight check for the initial issue or renewal of the applicable instrument rating.

(h) Where the pilot requires an instrument rating, the PPC shall include the instrument procedures section of the Schedule, except for helicopters where the PPC is to be completed only on one of the aircraft types for which an instrument rating is required.

(amended 1998/09/01)

(i) The synthetic flight training device level of training and checking credits shall be approved by Transport Canada in the training program approval process for each aircraft type. Training and checking procedures not approved for the synthetic flight training device shall be completed in the aircraft.

(2) Competency Check Standard

(amended 2005/06/01)

The standard for the pilot competency check for Aerial Work Operations is:

Except for single-seat pilot-only aircraft, the chief pilot, or a pilot delegated by the chief pilot, shall:

- (a) certify in company records the competency of each pilot on at least one of the aircraft to which a pilot is assigned and for which a type rating is not required;
- (b) certify in company records the competency of each pilot on each aircraft to which the pilot is assigned and for which a type rating is required;
- (c) pilots shall be certified competent in the performance of those check items contained in the applicable Schedule I - Aeroplane Pilot Proficiency Check or Schedule II - Helicopter Pilot Proficiency Check as applicable to the aircraft type; and
- (d) for pilot-only single-seat aircraft, the initial training program shall include cockpit familiarization instruction and at least three take-offs, circuits and landings. On completion of initial and annual training, the chief pilot, or a pilot delegated by the chief pilot, will certify satisfactory completion of training in company records.

(3) Authorized Aeroplane Groupings for PPC Purposes

(amended 2000/06/01)

Where an air operator has been authorized aeroplane grouping for PPCs (renewal only), Schedule III and IV shall be used to determine which aircraft can be grouped. The following standard shall apply:

- (a) for a pilot to commence participating in an air operator's authorized aeroplane grouping that pilot shall have passed within the preceding 24 months, in each type of aeroplane in which that pilot will act as a flight crew member, the PPC set out in Schedule I;
- (b) the pilot must complete initial and annual recurrent ground and flight training, including written examinations on systems and limitations, for each type of aeroplane in which he/she will serve as a crew member;
- (c) the annual PPC shall be conducted by an approved check pilot or a Department of Transport Inspector and passed on one of the aeroplane types from the authorized group. A different type of aeroplane from the group shall be used each successive two year period for the conduct of the PPC;
- (d) a failure to pass the PPC on the selected aeroplane type shall be considered to be a failure on all the aeroplane group types flown by that pilot; and
- (e) the document certifying qualifications and proficiency shall be endorsed for each aeroplane type.

NOTE:

Grouping of PPC's (renewal only) is transferable from one air operator to another if the hiring operator has been authorized for grouping of the same aircraft types. The pilot must complete the hiring air operators recurrent ground and flight training for each type on which he/she intends to serve as a crew member. The training shall be completed to the extent required to demonstrate competency to the air operators training pilot. Initial training and a PPC are required for any type on which the pilot is not current or has not previously served.

**SCHEDULE I - Pilot Proficiency Check -
Aeroplane**

(1) Pre-flight Phase

(a) Flight Planning and Equipment Examination

- (i) Flight planning shall include a practical examination on the pilot's knowledge of standard operating procedures and the *Aeroplane Flight Manual* including performance charts, loading, weight and balance and Flight Manual Supplements.
- (ii) The equipment examination shall show a practical knowledge of the airframe, engine, major components and systems including the normal, abnormal, alternate and emergency operating procedures and limitations relating thereto.

(b) Aeroplane Inspection

A pre-flight aeroplane inspection that includes:

- (i) a visual inspection of the exterior and interior of the aeroplane, locating each item to be inspected and explaining the purpose of the inspection;
- (ii) the proper use of the pre-start, start and pre-taxi check lists; and
- (iii) checks of the appropriate radio communications, navigation and electronic equipment and selection of the appropriate communications and navigation frequencies prior to flight.

(2) Flight Phase

(a) Taxiing

- (i) Taxiing procedures include, where appropriate, sailing and docking procedures;
- (ii) A taxiing check including:
 - (A) the use of the taxiing check list;
 - (B) taxiing in compliance with clearances and instructions issued by the appropriate air traffic control unit or by the person conducting the pilot proficiency check;
 - (C) where a second-in-command is undergoing the pilot proficiency check outlined above, to the extent practicable from the second-in-command position.

(b) Engine Checks

Engine checks shall be conducted as appropriate to the aeroplane type.

(c) Take-off

- (i) one normal take-off to be performed in accordance with the aeroplane flight manual;
- (ii) an instrument take-off performed in the same manner as the normal take-off except that instrument flight rules are simulated at or before reaching an altitude of 200 feet above the airport elevation. Not required to be demonstrated where the air operator's certificate authorizes operations under day VFR only, or the air operator assigns the pilot to day VFR flight only;
- (iii) where practicable under existing meteorological, airport or airport traffic conditions, one crosswind take-off performed in accordance with the aeroplane operating manual where applicable;

NOTE:

Any or all of the above take-offs may be combined.

- (iv) a simulated engine failure after take-off as follows:
 - (A) where performed in a visual synthetic flight training device, the simulated failure of the critical engine shall occur at the take-off safety speed plus 10 knots;
 - (B) where performed in an aeroplane in flight, at a safe altitude as close to the take-off safety speed plus 10 knots as is safe and appropriate to the aeroplane type under the prevailing conditions;
- (v) a rejected take-off:
 - (A) performed in a Level A synthetic flight training device prior to reaching lift-off speed; or
 - (B) explained by the candidate prior to the flight where the pilot proficiency check is conducted in an aeroplane.

(d) Instrument Procedures

Except where an Air Operator Certificate authorizes operation under day VFR only, or an operator assigns the pilot to day VFR flight only, instrument procedures shall consist of IFR pre-flight preparation, departure and enroute procedures, terminal procedures and system malfunctions.

- (i) An area departure and an area arrival procedure shall be performed where the pilot:
 - (A) adheres to actual or simulated air traffic control clearances and instructions; and
 - (B) properly uses the available navigation facilities;
- (ii) holding procedures;

(iii) at least two instrument approaches performed in accordance with procedures and limitations in the *Canada Air Pilot* or in the equivalent foreign publications, or the approved company approach procedure for the approach facility used. Where practicable, one of the approaches shall be a precision approach; and

(iv) a circling approach except where local conditions beyond the control of the pilot prevent a circling approach from being performed.

(e) In-flight Manoeuvres

(i) at least one steep turn in each direction with a bank angle of 45° and a change in heading of at least 180° but not more than 360°;

(ii) Approaches to stalls

For the purposes of this manoeuvre, the required approach to a stall is reached when there is a perceptible buffet or other response to the initial stall entry. When performed in an aeroplane, the approach to stalls shall be conducted at an altitude of at least 5000 feet AGL and if conducted above cloud at an altitude of at least 2000 feet above cloud tops.

The following approaches to stall are required during initial and upgrade PPCs:

(A) one in the take-off configuration, except where a zero-flap take-off configuration is normally used in that model and type of aeroplane;

(B) one in a clean configuration; and

(C) one in a landing configuration.

One of the approaches to stall may be performed while in a turn with a bank angle of between 15° and 30°;

(f) Landings and Approaches to Landings

(i) one normal landing which shall, where practicable, be conducted without external or internal glideslope information;

(ii) one landing from an instrument approach and, where prevailing conditions prevent an actual landing, an approach to a point where a landing could have been made. Not required to be demonstrated where the air operator's certificate authorizes operations under day VFR only, or the air operator assigns the pilot to day VFR flights only;

(iii) one crosswind landing where practicable under existing meteorological, airport and airport traffic conditions;

- (iv) one landing and manoeuvring to that landing with a simulated failure of 50 percent of the available engines;
- (v) one landing under simulated circling approach conditions except that where prevailing conditions prevent a landing, an approach to a point where a landing could have been made.

NOTE:

Any of the landings and approaches to landings specified in this section may be combined. A minimum of two landings are required.

(g) Normal Procedures

The pilot shall demonstrate or show knowledge of as many of the normal procedures as the person conducting the check finds are necessary to determine that the pilot has the knowledge and ability to properly use installed equipment. The demonstration of these procedures may be combined with in-flight manoeuvres. The following are examples of areas that may be examined:

- (i) anti-icing and de-icing systems;
- (ii) auto-pilot systems;
- (iii) automatic or other approach aid systems;
- (iv) stall warning devices, stall avoidance devices, and the stability augmentation system;
- (v) airborne radar devices; and
- (vi) other systems, devices, or aids.

(h) Abnormal and Emergency Procedures

- (i) the crew shall demonstrate use of as many of the normal, abnormal and emergency procedures as is necessary to confirm that the crew has an adequate knowledge and ability to perform these procedures;
- (ii) system malfunctions shall consist of a selection adequate to determine that the crew has satisfactory knowledge and ability to safely handle malfunctions; and
- (iii) at least two simulated engine failures will be performed at any time during the check.

SCHEDULE II - Pilot Proficiency Check - Helicopters

(1) Pre-flight Phase

(a) Flight Planning

- (i) a practical oral examination on applicable flight planning procedures, flight planning information sources and maintenance release procedures;
- (ii) a practical oral examination on the helicopter flight manual including limitations, loading, weight and balance, applicable flight manual supplements and the significance and use of performance charts.

(b) Pre-flight Inspection

- (i) a visual and, as applicable, functional exterior and interior inspection of the helicopter to show a practical knowledge of the airframe, major components, systems and applicable servicing procedures;
- (ii) use of check lists and procedures including engine and system checks;
- (iii) pre-flight checks of communications, navigation, electrical, flight instruments and ice protection systems as appropriate.

(2) Flight Phase

(a) Taxiing and Hover Manoeuvres

- (i) taxiing includes, when appropriate to the helicopter configuration, both ground and air taxi and, where a second-in-command is undergoing the pilot proficiency check, taxiing to the extent practical from the second-in-command position;
- (ii) taxiing in compliance with instructions issued by air traffic control or by the person conducting the pilot proficiency check;
- (iii) compliance with appropriate taxi, hover and pre-departure check procedures;
- (iv) 360 degree hover turns, sideward and rearward hovering manoeuvres and, when practical, out-of-wind stationary hovering;
- (v) landing from a hover to a sloped surface and take-off to a hover from a sloped surface;
- (vi) landing following simulated engine failure during hover or air taxi.

(b) Departure, Air Work, Approaches

- (i) normal transition to forward flight, climb to assigned altitude and normal approach and landing;
- (ii) for single-engine and multi-engine helicopters, a take-off with a rapid deceleration or rejected take-off procedure;
- (iii) for multi-engine helicopters, a simulated failure of one engine during take-off that will allow continued climb in forward flight;
- (iv) at assigned altitude climbs, descents and level flight throughout the normal speed range of the helicopter, including steep turns with a change of heading of at least 180 degrees but not more than 360 degrees;
- (v) for single-engine helicopters, autorotation approaches terminating at a pre-determined area in a landing or power recovery at the discretion of the air operator. At least one approach shall require a turn during autorotation descent through at least 180 degrees;
(amended 1999/09/01)
- (vi) for multi-engine helicopters, a simulated engine failure at assigned cruise altitude and an approach and landing with one engine inoperative;
- (vii) confined landing area procedure and approach terminating in a landing, hover or rejected approach and, when practical, a confined area departure;
- (viii) steep approach which may be combined with the confined area procedure.

(c) Instrument Procedures

Instrument procedures will consist of IFR pre-flight preparation, departure and enroute procedures, terminal procedures and system malfunctions.

- (i) instrument take-off so that instrument flight conditions are entered or simulated at or before reaching an altitude of 200 feet above take-off elevation;
- (ii) an area departure and an area arrival procedure where the pilot:
 - (A) adheres to actual or simulated air traffic control clearances and instructions; and
 - (B) properly uses available navigation facilities;
- (iii) a holding procedure that may be combined with an area arrival or departure and includes entry to, maintaining of and leaving a holding pattern;
- (iv) at least two instrument approaches performed in accordance with procedures and limitations for the approach facility used;

(v) at least one missed approach procedure and at least one landing after transition from an instrument approach procedure; and

(vi) emergencies and system malfunctions may be simulated during any phase of the flight.

(d) Normal and Abnormal Procedures

The pilot shall demonstrate use of as many of the normal and abnormal procedures for installed systems, devices and aids as the person conducting the check find necessary to determine that the pilot has the knowledge and ability to properly use installed equipment such as:

- (i) anti-icing and de-icing systems;
- (ii) automatic flight control and auto-pilot systems; and
- (iii) weather radar.

(e) Emergency Procedures, Malfunctions and Flight Characteristics

(i) Emergency Procedures and Malfunctions

The pilot shall demonstrate, or where demonstration is impractical, show knowledge of proper procedures for as many of the emergency situations and malfunctions listed below as necessary to determine adequate knowledge and ability:

- (A) fire in flight;
- (B) smoke control;
- (C) anti-torque control failure and malfunctions;
- (D) emergency descent;
- (E) hydraulic and electrical system failures and malfunctions;
- (F) flight instrument system failure and malfunction; and
- (G) any emergency procedure included in the flight manual or helicopter operating manual.

(ii) Flight Characteristics

The pilot shall show a practical knowledge of:

- (A) settling with power, vortex ring state and dynamic rollover to determine that the pilot is aware of causes, prevention and appropriate recovery procedures;
- (B) applicable flight characteristics peculiar to the helicopter type and configuration.

SCHEDULE III - Aeroplanes Having a MCTOW of Over 7000 lbs

(amended 2000/06/01)

Aircraft Manufacturer	Types
Aerocommander/IAI	1121, 1123, 1124 Jet Commander and Westwind Models
Beechcraft	90, 100 and A100 Models
Beechcraft	100, A100, 200 and B200 Models
Beechcraft	200, B200, 300 and 350 Models
British Aerospace	Jetstream 3100 and 3200 Series
British Aerospace	HS 125 All Viper Engine Driven
British Aerospace	HS 125 All Retrofit to FAN Engines
British Aerospace	HS 125 - 700 and 800 Series
Cessna	500, 501, 550 and 551 Models
Cessna	550, 551 and 560 Models
Cessna	650 All Models
Lear	23, 24 and 25 Models
Lear	35, 36 and 55 Models
Lockheed Jetstar	I, II and 731 Models
Piper	Cheyenne I, II and III Models
Saberliner	40, 60 and 75 Models
Swearingen/Fairchild	SA226AT (Merlin IV and IVA), SA226TC (Metro)
Swearingen/Fairchild	SA227 (Merlin IVC), SA227AC (Metro III), Metro SA227DC and Metro SA227CC

**SCHEDULE IV - Aeroplanes Having a MCTOW
of Under 7000 lbs**

(amended 2000/06/01)

PPC groupings are determined by Transport Canada using the methodology contained in Chapter One of TP 12993, *The Common Qualification and Training Manual*.

722.67 *Validity Period*

Where a flight crew member's pilot proficiency check, competency check or annual training expires for a period of 24 months or more, that flight crew member shall successfully complete the air operator's initial aircraft flight and ground training program on the type of aircraft and successfully complete the pilot proficiency check or competency check, as applicable, for the aircraft type.

DIVISION VIII - TRAINING

722.76 *Training Program*

(1) Training Standard General

- (a) Manuals, if applicable, shall be provided to each trainee on the subject matter to be taught;
- (b) Relevant training aids such as fire extinguishers, life preservers, rafts, aircraft components, static aircraft, etc. shall be available for the program being presented; and
- (c) Comprehensive examinations shall be used to validate competence of the trainee.

Ground training programs shall provide a means of evaluating the trainee after completion of the syllabus by completion of an examination with a review and correction of any errors. Training examinations should be comprehensive, and periodically reviewed and updated.

Type training programs are to be titled as to the type to which they apply and include the number of instructional hours to be provided. They should be performance oriented and stress the operation (normal, emergency and malfunctions) of the aircraft systems and equipment. Instruction related to components and systems that flight crews cannot control, influence or operate should be minimized.

(2) Flight Crew Training on a Contract Basis

An air operator may contract crew member training to another organization provided:

- (a) the arrangement is clearly provided for in the approved training program;
- (b) the outside organization uses the manuals and publications used by the air operator; (operations manual, SOP's, Operating Manual, Aircraft Flight Manual);
- (c) the air operator ensures that the training is conducted in accordance with the approved program;
- (d) where type training is conducted, the training is provided on the type and model operated by the air operator unless otherwise provided for in the approved training program; and
- (e) the air operator maintains training records.

(3) Qualifications of Training Personnel

(a) Instructor - Ground Training

- (i) has satisfied the air operator that he or she has the knowledge and skills to conduct the training;
- (ii) if conducting aircraft type training he or she has successfully completed the ground school for the aircraft type.

(b) Flight Training Pilot

- (i) hold a valid Commercial Pilot Licence or Airline Transport Pilot Licence as required to act as pilot-in-command on commercial air service operations on the aircraft type;
- (ii) if conducting night flight training, be qualified for night flight and, unless the air operator is authorized night operations using only pilots not instrument rated, hold a valid instrument rating for the category of aircraft and class of aeroplane;
- (iii) if conducting IFR flight training hold a valid instrument rating for the category of aircraft and class of aeroplane;
- (iv) if conducting parachute jumping flight training, have qualifications as described in subparagraph (i) or, with a private pilot licence, have acquired a minimum of 250 hours pilot-in-command flying parachutists prior to October 10, 1996;
(amended 2000/06/01)
- (v) have knowledge of the applicable Aircraft Flight Manual, Aircraft Operating Manual, Standard Operating Procedures, Company Operations Manual;
(amended 2000/06/01)
- (vi) have knowledge of the provisions of the applicable regulations and standards;
(amended 2000/06/01)
- (vii) if conducting training in a Synthetic Flight Training Device, holds or has held the qualifications and ratings as detailed above for a flight training pilot, has successfully completed flight training in the device to pilot-in-command standards of the air operator's type training program, and has received instruction on operation of the device.
(amended 2000/06/01)

(c) Instructors and flight training pilots are responsible for presenting the assigned approved training program, monitoring standards, recommending changes to training programs and operating procedures where warranted and ensuring that trainees are competent for their assigned duties on completion of training. The operations manager or chief pilot may delegate responsibility for maintaining training records to instructors and training pilots.

(4) Company Indoctrination Training

This training is required upon employment for all persons assigned to an operational control function including base managers, pilots and persons responsible for flight following. The program shall ensure that persons involved in control of flight operations are aware of their responsibilities, know company reporting relationships and are competent to fulfil their assigned duties related to flight operations. Company indoctrination training shall include as applicable:

- (a) *Canadian Aviation Regulations* and applicable standards;
- (b) Air Operator Certificate and Operations Specifications;
- (c) company organization, reporting relationships and communication procedures, including duties and responsibilities of crew members and the relationship of their duties to other crew members;
- (d) flight planning and operating procedures;
- (e) fuelling procedures, including fuel contamination precautions;
- (f) critical surface contamination and safety awareness program;
- (g) safety briefings and safe movement of persons to and from aircraft;
- (h) use and status of the Company Operations Manual including maintenance release procedures and accident/incident reporting procedures;
- (i) use of Minimum Equipment List as applicable;
- (j) meteorological training appropriate to the area of operation;
- (k) navigation procedures appropriate to the area of operation;
- (l) carriage of external loads;
- (m) operational control system; and
- (n) weight and balance system.

(5) Upgrading Training

Upgrading training for a second-in-command upgrading to pilot-in-command on an aircraft type shall include:

- (a) completion of applicable qualification training related to assigned duties; and
- (b) completion of type training as pilot-in-command on the aircraft type and a pilot-in-command competency check or pilot proficiency check as applicable.

(6) Aerial Work Training

(a) Pilot training shall be provided where the aerial work requires particular flight manoeuvres, aircraft performance considerations or knowledge of equipment to safely conduct the operation.

Training shall include, as applicable:

- (i) training related to contents and requirements of flight manual supplements or airworthiness approvals;
- (ii) pre-flight inspection requirements of aerial work equipment;
- (iii) procedures for handling malfunctions and emergencies related to the aerial work equipment;
- (iv) operational preparation procedures related to reconnaissance of aerial work areas before low level flight operations;
- (v) operational restrictions; and
- (vi) flight training and practice in required flight manoeuvres.

(b) Training - Class B and Class C External Loads

This training is required where a pilot has not received training for the Class of external load to be carried or has not conducted the Class of external load within the previous 24 calendar months.

- (i) restrictions related to external load operations over built-up areas;
- (ii) preparation of loads, load rigging procedures and attaching of Class B and Class C loads as applicable;
- (iii) steps to be taken before starting operations, including flight and ground crew briefings, and instructions, inspection of suspension cables and pre-flight checking of jettison system;
- (iv) precautions related to aerodynamics of Class B and Class C external loads, including oscillation and carriage of unweighted cables;
- (v) flight training in the pick-up, departure, approach and delivery of representative Class B external loads as applicable;
- (vi) flight training in manoeuvring with Class C external loads as applicable; and
- (vii) instruction on the applicable external load flight manual supplement.

(c) Training - Class D External Loads

An approved initial and annual recurrent training program is required for pilots assigned to Class D External Load Operations. The training program shall include:

- (i) instruction on the applicable flight manual supplement or airworthiness approvals, including weight and balance calculation procedures, method of loading, rigging and attaching the external load and pre-flight procedures;
- (ii) instruction on operational requirements, including calculation of one engine inoperative performance as applicable, co-ordination communications procedures and operational restrictions;
- (iii) steps to be taken before commencing Class D load operations, including flight and ground crew briefings and instructions and pre-flight inspection requirements; and
- (iv) flight training with representative Class D loads including, as applicable to the load attachment configuration:
 - (A) precision hovering in and out of ground effect, including vertical reference manoeuvring;
 - (B) pick-up, departure, approach and delivery of Class D loads;
 - (C) simulated emergencies and malfunction procedures with representative Class D loads.

(d) Training - Embarking and Disembarking Persons Pursuant to section 702.18 of the Canadian Aviation Regulations**Ground Training**

- (i) briefing procedures for persons to be embarked or disembarked, including procedures for loading of equipment;
- (ii) calculation of weight and centre of gravity limits including calculation of centre of gravity change.

Flight Training

- (i) precision hovering at gross weight with centre of gravity at lateral limits;
- (ii) precision hovering while persons disembark, load equipment and embark.

(7) Ground Technical Type Training**Initial and Annual Recurrent**

This training shall ensure that each flight crew member is knowledgeable with respect to the aircraft systems and all normal, malfunction and emergency procedures. Ground technical type training programs shall include:

- (a) aircraft systems operation and limitations as contained in the Aircraft Flight Manual, aircraft operating manual and standard operating procedures;
- (b) use and operation of navigation and ancillary equipment;
- (c) equipment differences of aircraft of the same type, as applicable;
- (d) operation of normal and emergency exits and evacuation procedures;
- (e) aircraft performance and limitations;
- (f) weight and balance procedures; and
- (g) aircraft servicing and ground handling procedures.

(8) Aircraft Servicing and Ground Handling Training

Training in aircraft servicing and ground handling for pilots shall include as applicable to the aircraft type:

- (a) fuelling procedures:
 - (i) types of fuel, oil and fluids used in the aircraft;
 - (ii) correct fuelling procedures; and
 - (iii) procedures for checking fuel, oil and fluids and securing of caps;
- (b) use of tow bars and allowable nose wheel deflection;
- (c) use and installation of protective covers; and
- (d) procedures for operating in cold weather such as:
 - (i) moving aircraft from warm hangar when precipitation is present;
 - (ii) procedures for applying de-icing and anti-icing fluids including critical flight controls post application inspection;
 - (iii) seasonal use of parking brake, as applicable; and
 - (iv) engine and cabin pre-heat procedures including proper use of related equipment.

(9) Synthetic Flight Training Devices

A Synthetic Flight Training Device has two classifications:

- (a) Full Flight Simulator (FSS);
- (b) Flight Training Device (FTD); and

Provided the training device is approved in accordance with the *Aeroplane and Rotorcraft Simulator Manual* and the FTD Training Program is approved, an air operator is permitted to conduct training in that Flight Training Device. The training device shall represent the aircraft with sufficient fidelity, including control and system checks, take-off, climb, cruise, approach, landing and in malfunctions and emergencies, as applicable to the training sequences to be conducted. If a flight simulator has differences in performance, systems or cockpit layout or configuration from the air operator's aircraft, additional training on differences shall be provided. Flight training in the aircraft must be carried out for general handling and landing manoeuvres for initial and upgrade training.

(10) Aircraft Flight Training Program

Initial and Annual Recurrent

The initial and annual flight training program shall ensure that each flight crew member is trained to competently perform the assigned duties including those relating to abnormal and emergency duties. Simulated malfunctions and failures shall only take place under operating conditions which do not jeopardize safety of flight. Flight training programs shall include, as applicable to aircraft type;

- (a) standard operating procedures for normal, abnormal and emergency operation of aircraft systems and components;
- (b) use of check lists, including interior and exterior pre-flight checks;
- (c) crew member co-ordination procedures;
- (d) normal take-offs, circuits, approaches and landings including, as applicable, ground manoeuvring and hovering;
- (e) simulated engine and cabin fire procedures, including smoke control;
- (f) simulated engine and system malfunctions and failures including hydraulic and electrical systems and, for PIC on three and four engine aeroplanes, approach and landing with two engines simulated inoperative;
- (g) simulated failure of navigation and communication equipment;
- (h) approach to stall (clean, take-off and landing configuration) and recovery procedure simulating ground contact imminent and ground contact not a factor;
- (i) autorotations and anti-torque system malfunctions, as applicable;

- (j) rejected take-off procedures and rejected/balked landing procedures;
- (k) use of performance information and performance calculation procedures;
- (l) simulated loss of pressurization and emergency descent;
- (m) buffet onset boundary, steep turns and flight characteristics;
- (n) briefings on icing and anti-ice operations, recovery from turbulence and windshear, and evacuation procedures;
- (o) flight manoeuvres used in aerial work operations; and
- (p) flight planning and instrument flight procedures, as applicable, where the air operator is authorized for VFR at night or IFR including flight at night and under simulated IFR using each type of navigation facility used in normal operations.

(11) Transportability of Pilot Proficiency Check and Competency Check

Transportability of the validity of a Competency Check from one air operator to another air operator is permitted provided the pilot is assigned to only Aerial Work Operations unless the Competency Check was conducted under the responsibility of a Chief Pilot of an Air Taxi Operation.

Transportability of the validity of a Pilot Proficiency Check (PPC) from one air operator to another air operator is permitted. The 24 month PPC validity period is applicable to Aerial Work Operations only and the PPC shall not be valid for Air Transport Commercial Air Service Operations unless the valid period of the PPC complies with the applicable *Canadian Aviation Regulations* Subpart PPC validity period.

In all cases, transportability of PPC and Competency Check validity is subject to the hiring air operator providing the following training which shall be specified in the Company Operations Manual:

- (a) company indoctrination training;
- (b) pilot ground and emergency procedures training on each type of aircraft to which the pilot is assigned sufficient to cover the hiring air operator's procedures and equipment differences;
- (c) standard operating procedures review; and
- (d) the hiring air operator records the Pilot Proficiency Check or Competency Check applicable validity expiration date in company records.

(12) Single-engine Aeroplanes Carrying Persons other than Flight Crew under IFR - Pilot Training Requirements

The following training is required:

- (a) initial training in an approved synthetic training device, including all emergency procedures that cannot be safely practised in the aeroplane;
- (b) training in the aeroplane in accordance with the following training requirement:

Training Requirements

INITIAL			RECURRENT		
Ground	Aeroplane	Simulator	Ground	Aeroplane	Simulator
20.0	2.0	6.0	7.5	1.0	N/R

1. Ground training times do not include self-study or examination times.
2. Written exams are mandatory at completion of both Initial and Recurrent Ground Training.
3. Synthetic training device and Aeroplane times are Pilot Flying (PF) times only.

Required Synthetic Training Device Exercises

- use of checklists
- aeroplane fire on ground or while airborne
- engine fire on ground and in flight
- engine failure in flight
- inadvertent encounter with airframe icing conditions and operation of de-icing and anti-icing equipment
- hydraulic, electrical, and other system malfunctions (as applicable)
- loss of pressurization and emergency descent, (as applicable)
- recognition and recovery from turbulence and windshear on approach and landing
- rejected take-offs and landings
- missed approach and go-around
- straight-in and circling approaches, with emphasis on non-precision procedures

(13) Emergency Procedures Training

This training is required annually and shall include instruction on the location and operation of all emergency equipment. Training devices approved to simulate flight operating emergency conditions, static aircraft, ground demonstration, classroom lectures, films or other devices may be used for training provided the method used ensures that each trainee is proficient in the operation or use of all emergency equipment.

Whenever practical training is required it shall be completed on initial training and every three years thereafter.

- (a) contents and use of emergency survival equipment carried on board aircraft including survival concepts;
- (b) use of fire extinguishers including practical training;
- (c) donning and inflation of life preservers including practical training;
- (d) removal from stowage, deployment, inflation and boarding of life rafts when applicable, including practical training;
- (e) pilot incapacitation as applicable, including practical training;
- (f) evacuation procedures and use and operation of normal and emergency exits in an emergency including practical training;
- (g) emergency briefing procedures and preparation for emergency landing and ditching;
- (h) aircraft fire in the air and on the ground;
- (i) post accident vital actions related to the securing of fuel and electrical systems to minimize fire hazards.

(14) Surface Contamination Training

An approved surface contamination initial and recurrent training program is required for all operations personnel to ensure operations personnel are aware of hazards and procedures for ice, frost and snow critical surface contamination on aircraft. The training program shall include:

- (a) the responsibility of the pilot-in-command and other operations personnel;
- (b) regulations related to operations in icing conditions;
- (c) weather conducive to ice, frost and snow contamination;
- (d) inspection before flight and removal of contamination;
- (e) in-flight icing recognition; and
- (f) hazards related to critical-surface contamination by ice, frost and snow.

(15) Area Navigation Systems (RNAV)

(amended 1998/09/01)

(a) General Training

(i) To qualify for use of RNAV systems on IFR operations, an air operator shall have an approved flight crew training and qualification program for use of the system. Flight crew shall have completed the appropriate training and have completed an in-flight check or an equivalent check in a flight training device. This qualification check shall be conducted by an approved check pilot.

(ii) Training shall be in the following areas:

- (A) pre-flight;
- (B) normal operation of the system;
- (C) procedures for manually updating system;
- (D) methods of monitoring and cross checking system;
- (E) operation in area of compass unreliability;
- (F) malfunction procedures;
- (G) terminal procedures;
- (H) waypoint symbology, plotting procedures, record keeping duties/practices;
- (I) time keeping procedures; and
(amended 2003/03/01)
- (J) post-flight.
(amended 2003/03/01)

(iii) To qualify for approval to conduct GPS approaches in IFR, an air operator shall have a flight crew training program approved by the Minister. Flight crew shall have completed the appropriate training and have completed an in-flight check, or an equivalent check in a synthetic training device approved by the Minister prior to conducting GPS approaches. This qualification check shall be conducted by an approved check pilot.

(iv) Where pilots are required to use more than one type of GPS for approach, the training program must address the differences between the units, unless the units have been determined by the Minister to be sufficiently similar.

(v) Ground training shall include “hands on” training using a desk top simulator, a computer based simulation of the unit to be used, a static in-aircraft unit, or other ground training devices acceptable to the Minister.

(b) Ground Training - Non-Integrated Receivers (Panel Mount GPS Receivers)

An air operator shall ensure that the training program candidates are trained to proficiency in each of the elements associated with the following areas:

(i) Knowledge with the respect to the following:

(A) the GPS system, including:

- (I) GPS system components and aircraft equipment;
- (II) the composition of satellite constellation;
- (III) the minimum number of satellites required for 2-D and 3-D navigation;
- (IV) the basic concept of satellite ranging;
- (V) factors affecting the accuracy of GPS signals; and
- (VI) the World Geodetic Survey 84 (WGS 84) datum and the effect of using any other datum;

(B) human factors applicable to the use of GPS and how errors may be reduced or eliminated;

(C) company standard operating procedures for using GPS units; and

(D) procedures for reporting GPS problems and database errors.

(ii) Ability to perform the following operational tasks:

(A) select appropriate operational modes;

(B) recall categories of information contained in the database;

(C) predict RAIM availability;

(D) enter and verify user defined waypoints;

(E) recall and verify database waypoints;

(F) interpret typical GPS navigational displays including latitude/longitude, distance and bearing to waypoint, course deviation indication (CDI), desired track (DTK), track made good (TMG), actual track (TK), cross track error and any other information appropriate for the equipment used;

(G) intercept and maintain GPS defined tracks;

(H) determine navigation information appropriate for the conduct of the flight including ground speed (GS), estimated time of arrival (ETA) for next waypoint and destination;

(I) recognition of waypoint passage;

- (J) use of 'direct to' function;
 - (K) link enroute portion of GPS flight plan to approach;
 - (L) conduct SIDs, STARs, terminal area procedures and holds;
 - (M) retrieve, verify and conduct GPS stand alone approaches; and
 - (N) conduct GPS missed approaches.
- (iii) Ability to conduct the following operational and serviceability checks:
- (A) database currency and area of operation;
 - (B) receiver serviceability;
 - (C) RAIM status;
 - (D) CDI sensitivity;
 - (E) position indication; and
 - (F) number of satellites acquired and, if available, satellite position information.
- (iv) Ability to recognize and take appropriate action for all GPS warnings and messages including, where applicable:
- (A) "loss of RAIM";
 - (B) "2D navigation";
 - (C) "In Dead Reckoning Mode";
 - (D) "database out of date";
 - (E) "GPS fail";
 - (F) "barometric input fail";
 - (G) "power/battery low" or "fail";
 - (H) "parallel offset on"; and
 - (I) "satellite fail".

(c) Ground Training - Integrated Receivers (Flight Management Systems)

An air operator shall ensure that the training program candidates are trained to proficiency in each of the elements associated with the following areas.

(i) Knowledge with the respect to the following:

(A) the GPS system and theory of operation, including:

(I) GPS system components and aircraft equipment;

(II) the composition of satellite constellation;

(III) the minimum number of satellites required for 2-D and 3-D navigation;

(IV) the basic concept of satellite ranging;

(V) factors affecting the accuracy of GPS signals;

(VI) the WGS84 datum and the effect of using any other datum; and

(B) human factors applicable to the use of GPS and how errors may be reduced or eliminated (i.e. maintaining situational awareness);

(ii) Ability to perform the following operational tasks:

(A) predict RAIM availability;

(B) link enroute portion of GPS flight plan to approach;

(C) conduct GPS stand alone approaches; and

(D) conduct GPS missed approaches;

(iii) Ability to conduct the following operational and serviceability checks:

(A) RAIM status;

(B) CDI sensitivity; and

(C) number of satellites acquired and, if available, satellite position information;

(iv) Ability to recognize and take appropriate action for all GPS warnings and messages including, where applicable:

(A) "loss of RAIM";

(B) "2D navigation";

(C) "GPS fail";

(D) "barometric input fail"; and

(E) "satellite fail".

(d) Flight Training

(i) Pilots shall complete flight training in the use of GPS for approach and other associated duties for each crew position they are authorized to occupy. Flight training may be completed in an aircraft, or in a level A or higher simulator that is equipped with the same model of GPS receiver (or a model determined by the Minister to be sufficiently similar) that is installed in company aircraft.

(ii) Flight training shall be conducted by a designated training pilot who has completed the company ground training program approved by the Minister, and demonstrated proficiency in the use of the model of GPS (or a model determined by the Minister to be sufficiently similar) to an approved check pilot.

(amended 2006/06/30)

(16) Minimum Equipment List Training

When a Minimum Equipment List (MEL) has been approved for use by the operator on an aircraft type, the air operator shall provide the following training to flight crew members, maintenance personnel and to persons exercising operational control, as applicable:

(amended 2004/12/01)

(a) training for maintenance personnel shall include instruction on those sections of the Maintenance Control Manual which address the MEL, placarding of inoperative equipment, maintenance release procedures and any other MEL related procedures;

(amended 2004/12/01)

(b) training for flight crew members and operational control personnel shall include instruction on the purpose and use of an MEL, air operator MEL procedures, elementary work as applicable, and responsibility of the pilot-in-command;

(amended 2004/12/01)

(c) recurrent training shall be conducted annually to ensure air operator personnel are aware of any changes to the MEL or MEL procedures.

(17) Transportation of Dangerous Goods Training

Training required pursuant to the Transportation of Dangerous Goods Regulations.

(18) High Altitude Training

High Altitude Training is required for flight crew operating aircraft above 13,000 feet ASL before the first assignment on a pressurized aircraft and every three years thereafter. Training shall include:

(a) physiological phenomena in a low pressure environment, including:

(i) respiration;

(ii) hypoxia;

- (iii) duration of consciousness at altitude without supplemental oxygen; and
 - (iv) gas expansion and gas bubble formation.
- (b) other factors associated with rapid loss of pressurization including:
- (i) most likely causes;
 - (ii) noise;
 - (iii) cabin temperature change;
 - (iv) cabin fogging;
 - (v) effects on objects located near point of fuselage failure; and
 - (vi) actions of crew members immediately following the event and the likely resultant altitude.

(19) Training for Personnel Assigned to Duties on Board Aircraft

Personnel assigned to crew member duties on board aircraft shall be provided training to ensure that each crew member is trained to perform assigned duties, including:

- (a) proper use of on-board equipment relating to assigned duties;
- (b) crew member communication and co-ordination procedures;
- (c) duties relating to abnormal and emergency procedures including operation and use of emergency equipment and emergency exits; and
- (d) evacuation procedures.

(20) Training for Personnel who are Carried Externally

Persons assigned to be carried externally by helicopter Class D external load means shall be trained in related procedures and use of attachment equipment. Training shall include:

- (a) flight crew and externally carried person(s) communication and coordination procedures;
- (b) procedures (pilot action) in the event of an aircraft system malfunction or emergency;
- (c) equipment inspection procedures;
- (d) proper attachment procedures;
- (e) pre-flight inspection procedures;
- (f) equipment malfunction procedures;
- (g) practice in use of equipment and procedures using static aircraft; and
- (h) operational practice in procedures and use of equipment.

(21) Airborne Icing Training

(a) Approved initial and recurrent training programs for all flight crew shall include airborne icing training to ensure that the flight crew is fully aware of the hazards presented by airborne icing and the operating procedures to avoid and exit hazardous icing conditions.

(amended 1998/09/01)

(b) The training program referred to in paragraph (a) shall include:

(i) Ground Training consisting of:

(A) basis of certification for flight into known icing conditions;

(B) airborne icing definitions and terminology;

(C) aerodynamic effects of airborne icing;

(D) airborne icing weather patterns, including both classical and non-classical mechanisms for freezing precipitation;

(E) flight planning and in-flight icing information;

(F) information specific to aircraft fleet concerning operation de-ice and anti-ice equipment, and operational procedures; and

(G) company directives concerning operations in airborne icing contained in COMs, SOPs, and other company documents.

(ii) Flight Training - Synthetic Training Device

Operators with IFR authority, who conduct training in synthetic training devices capable of simulating hazardous icing conditions, shall include scenarios involving inadvertent encounters with moderate to severe in-flight icing in their initial and recurrent simulator training syllabi.

DIVISION IX - MANUALS

722.82 *Contents of a Company Operations Manual*

(1) Company Operations Manual for IFR and VFR at Night Operation

(a) preamble related to use and authority of manual;

(b) table of contents;

(c) amending procedures, amendment record sheet, distribution list and list of effective pages;

(d) copy of Air Operator Certificate and Operations Specifications;

(e) chart of company management organization;

- (f)* duties, responsibilities and succession of command of management and operations personnel;
- (g)* description of operational control system, including:
 - (i)* flight authorization and flight preparation procedures;
 - (ii)* preparation of operational flight plan and other flight documents;
 - (iii)* procedures to ensure the flight crew are advised, prior to flight, of any aircraft defects that have been deferred (MEL or other means);
 - (iv)* flight watch, flight following and communications requirements;
 - (v)* dissemination procedures for operational information and acknowledgement;
 - (vi)* fuel and oil requirements;
 - (vii)* weight and balance system;
 - (viii)* accident/incident reporting procedures and procedures for reporting overdue aircraft;
 - (ix)* use of check lists;
 - (x)* maintenance discrepancy reporting and requirements on completion of flights; and
 - (xi)* retention period of operational flight plans and flight documents;
- (h)* sample of operational flight plan and weight and balance form;
- (i)* FDR and CVR procedures as applicable;
- (j)* operating weather minima and applicable requirements for IFR, VFR, VFR at night, VFR over-the-top and, if applicable, use of reduced VFR visibility limits in uncontrolled airspace;
- (k)* instrument and equipment requirements;
- (l)* instrument approach procedures and alternate aerodrome requirements;
- (m)* procedures pertaining to enroute operation of navigation and communication equipment, including collisions;
- (n)* operations in hazardous conditions such as icing, thunderstorms, white-out, windshear;
- (o)* performance limitations, as applicable;
- (p)* securing of cargo;
- (q)* briefing procedures for persons other than flight crew;
- (r)* use of Aircraft Flight Manual, Aircraft Operating Manual, Standard Operating Procedures and Minimum Equipment Lists as applicable;

- (s) aircraft ice, frost and snow critical-surface contamination procedures;
- (t) procedures for carriage of dangerous goods, as applicable;
- (u) fuelling procedures including:
 - (i) fuel contamination precautions;
 - (ii) bonding requirements;
 - (iii) fuelling with engine running;
 - (iv) fuelling with persons on board;
- (v) list of emergency and survival equipment carried on aircraft, how to use equipment and periodic inspection details;
- (w) emergency procedures for:
 - (i) emergency locator transmitter;
 - (ii) preparation for emergency landing/ditching; and
 - (iii) emergency evacuation;
- (x) minimum flight crew required and crew member qualifications;
- (y) flight time, flight duty time limitations and rest requirements;
- (z) training programs including copy of company training and qualification record form(s);
- (a-a) operational support services and equipment;
- (b-b) use of oxygen; and
- (c-c) procedures related to the aerial work operation including, as applicable;
 - (i) carriage of external loads;
 - (ii) low level flight precautions;
 - (iii) towing precautions, pick-up and release procedures;
 - (iv) helicopter external load procedures, including flight and ground crew signals and briefing procedures, steps to be taken before starting an external load operation, hazards of oscillating loads, low density loads and unfamiliar load configurations; and
 - (v) operational restrictions related to aerial work operations.

(2) Operations Manual Content for Day VFR Operation.

Include items listed (a) through (f) of subsection (1) and the following:

- (a) flight authorization and flight preparation procedures;
- (b) retention period of flight operations documents;
- (c) flight following and communication requirements;
- (d) dissemination procedures for operational information ;
- (e) fuel and oil requirements;
- (f) weight and balance system;
- (g) accident/incident reporting procedures and procedures for reporting overdue aircraft;
- (h) use of check lists;
- (i) maintenance discrepancy reporting and requirements on completion of flights;
- (j) operating weather minima and applicable requirements for VFR, VFR over-the-top and reduced VFR visibility limits in uncontrolled airspace if applicable;
- (k) operations in hazardous conditions such as icing, thunderstorms, white-out, windshear;
- (l) performance limitations, as applicable;
- (m) securing of cargo;
- (n) briefing procedures for persons other than flight crew;
- (o) use of Aircraft Flight Manual, aircraft operating manual, standard operating procedures and MEL as applicable;
- (p) aircraft ice, frost and snow critical-surface contamination procedures;
- (q) procedures for carriage of dangerous goods;
- (r) fuelling procedures including;
 - (i) fuel contamination precautions;
 - (ii) bonding requirements;
 - (iii) fuelling with persons on board; and
 - (iv) fuelling with engine running;
- (s) list of emergency and survival equipment carried on aircraft, how to use equipment and periodic inspection requirements;

- (t) emergency procedures for:
 - (i) emergency locator transmitter.;
 - (ii) preparation for emergency landing/ditching; and
 - (iii) emergency evacuation;
- (u) minimum crew members required and crew member qualifications;
- (v) flight time, flight duty time limitations and rest requirements;
- (w) training programs, including copy of company training and qualification record form(s);
- (x) operational support services and equipment; and
- (y) procedures related to aerial work operations including, as applicable:
 - (i) carriage of external loads;
 - (ii) low level flight precautions;
 - (iii) towing precautions, pick-up and release procedures;
 - (iv) helicopter external load procedures, including flight and ground crew signals and briefing procedures, steps to be taken before starting an external load operation, hazards of oscillating loads, low density loads and unfamiliar load configurations; and
 - (v) operational restrictions related to aerial work operations.

(3) Abbreviated Content for Owner/Pilot Operating one Aircraft Day VFR

- (a) table of contents;
- (b) amendment procedures;
- (c) list of effective pages;
- (d) copy of Air Operator Certificate and Operations Specifications;
- (e) weight and balance system;
- (f) list of emergency and survival equipment carried on board aircraft;
- (g) procedures for reporting overdue aircraft;
- (h) procedures for reduced VFR visibility limits in uncontrolled air space if applicable; and
- (i) accident/incident reporting procedures.

(4) An abbreviated manual content for parachute jumping air operators operating no more than seven single-engined aircraft day or night VFR shall contain

(amended 2000/12/01)

- (a) a preamble relating to use and authority of the manual;
- (b) a table of contents;
- (c) amendment procedures;
- (d) a list of effective pages;
- (e) a copy of the Air Operator Certificate and operations specifications;
- (f) a weight and balance system;
- (g) a list of emergency equipment carried on board the aircraft;
- (h) procedures for reporting overdue aircraft;
- (i) accident and incident reporting procedures; and
- (j) parachute jumping procedures for day and night VFR operations.

722.84 Aircraft Standard Operating Procedures (SOPs)

The Standard Operating Procedures shall contain the following information for each type of two pilot aircraft operated. Where there are significant differences in equipment and procedures between the same type operated, the Standard Operating Procedures Manual shall show the registration mark of the aircraft it is applicable to.

Required information, if contained in another publication carried on board the aircraft during flight, need not be repeated in the SOP.

The SOP may form part of the Company Operations Manual. The SOP shall contain the following as applicable to the operation.

(1) General

- (a) table of contents;
- (b) list of effective pages;
- (c) amending procedure;
- (d) preamble;
- (e) communications;
- (f) crew co-ordination;
- (g) use of check lists;

(h) standard briefings; and

(i) standard calls.

(2) Normal Procedures

(a) weight and balance control requirements;

(b) ramp procedures;

(c) battery / APU engine starts;

(d) taxi;

(e) take-off and climb;

(f) cruise;

(g) descent;

(h) approaches IFR, visual, VFR and circling as applicable;

(i) landing;

(j) missed approach and balked landing procedure;

(k) stall recovery, as applicable;

(l) refuelling with persons on board;

(m) use of on-board navigation and alerting aids; and

(n) check lists.

(3) Abnormal and Emergency Procedures

(a) emergency landing / ditching - with time to prepare and without time to prepare;

(b) pilot incapacitation two communication rule;

(c) bomb threat and hijacking;

(d) engine fire/failure/shutdown;

(e) propeller overspeed / rotor overspeed as applicable;

(f) fire, internal / external;

(g) smoke removal;

(h) rapid decompression as applicable;

(i) flapless approach and landing, as applicable; and

(j) inadvertent encounter with moderate to severe in-flight icing.

(amended 1998/09/01)



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CANADIAN AVIATION REGULATIONS

PART VII - COMMERCIAL AIR SERVICES

STANDARD 723 - AIR TAXI - AEROPLANES

Canada

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NOTE

All amendments to the CARs will be indicated by the Coming into Force date, immediately following the amended text.

RECORD OF AMENDMENTS

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STANDARD 723 - AIR TAXI - AEROPLANES

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Foreword

This Commercial Air Service Standard outlines the requirements for complying with Subpart 703 of the *Canadian Aviation Regulations*.

For ease of cross reference, the divisions and numbers of the standard are assigned to correspond to the regulations, therefore Standard 723.05 would reflect a standard required by Section 703.05 of the Regulations.

PART VII - COMMERCIAL AIR SERVICES

STANDARD 723 - AIR TAXI - AEROPLANES

DIVISION I - GENERAL

The standards under this Subpart apply to every Canadian air operator engaged in commercial air services under Subpart 703 of the *Canadian Aviation Regulations*.

Definitions

The words and expressions used in these Standards have the same meaning as in the General Provisions in Section 100.01 of the *Canadian Aviation Regulations* with the following additions:

- “deplane” - means disembark; an aeroplane is deplaned when the passengers leave the aeroplane in the normal manner as opposed to evacuating the aeroplane. (*débarquement*)
- “evacuate” - the egress from an aeroplane in an emergency situation using all available exits and assist means such as wings etc. (*évacuation*)
- “fuelling” - means the act of transferring fuel into or out of an aeroplane fuel tank from or to an external supply. (*avitaillement ou reprise de carburant*)
(amended 2003/06/01)
- “operations co-ordination” - means the exercise of authority by an air operator over its operating activities, excluding operational control. (*coordination des opérations*)
- “take-off safety speed” - is the lowest speed at which the aeroplane complies with those handling criteria associated with the climb after take-off following an engine failure. (*vitesse de sécurité au décollage*)

DIVISION II - CERTIFICATION

723.07 Issuance or Amendment of Air Operator Certificate

(1) Application for an Air Operator Certificate

The following constitutes an application for an Air Operator Certificate:

- (a) Form 26-0045 Airport - information required to determine the suitability of the base of operations, sub-bases and all scheduled points. The operator shall be able to demonstrate that operations are permitted at each base, sub-base or scheduled point. This will normally

be done by providing written permission from the Local Airport Authority (LAA). Where the air operator can not obtain written permission and operations have not been denied in writing by the LAA, access to the aerodrome shall be demonstrated by other means; such as facilities provided through a lease, contractual agreement, etc.;

- (b) Form 26-0046 Aircraft - information with respect to each aeroplane by registration;
- (c) Form 26-0047 Personnel - information on required personnel. These shall be supported by resumes and statements of qualification for each position;
- (d) Form 26-0048 Maintenance Facilities;
- (e) Maintenance Control Procedures;
- (f) *Company Operations Manual*;
- (g) Minimum Equipment List(s), (if applicable);
- (h) nomination for Company Check Pilot, (if applicable);
- (i) Form 26-0448 Cabin Safety, (if applicable); and
- (j) aeroplane crash charts (if the type has not previously been operated in Canada).

(2) Qualifications and Responsibilities of Operational Personnel

(a) Operations Manager

(i) Qualifications

(A) hold or have held the appropriate licence and ratings which a pilot-in-command is required to hold for one of the aeroplanes operated; or have acquired not less than 2 years related supervisory experience with an air operator of a commercial air service whose flight operations are similar in size and scope;

(B) demonstrate knowledge to the Minister with respect to the content of the *Company Operations Manual*, the Air Operator Certificate and Operations Specifications, the provisions of the regulations and standards necessary to carry out the duties and responsibilities to ensure safety; and

(C) has attended a Company Aviation Safety Officer (CASO) course or attends such a course within 12 months of assuming the position of Operations Manager.

(amended 2000/12/01)

(ii) Responsibilities

The Operations Manager is responsible for safe flight operations. In particular the responsibilities of the position include:

- (A) control of operations and operational standards of all aeroplanes operated;
- (B) the identification of operations coordination functions which impact on operational control (eg. maintenance, crew scheduling, load control, equipment scheduling);
- (C) supervision, organization, function and manning of the following:
 - (I) flight operations;
 - (II) cabin safety;
 - (III) crew scheduling and rostering;
 - (IV) training programs; and
 - (V) flight safety;
- (D) the contents of the air operator's *Company Operations Manual*;
- (E) the supervision of and the production and amendment of the *Company Operations Manual*;
- (F) liaison with the regulatory authority on all matters concerning flight operations, including any variations to the air operator's Air Operator Certificate;
- (G) liaison with any external agencies which may affect air operator operations;
- (H) ensuring that the air operator's operations are conducted in accordance with current regulations, standards and air operator policy;
- (I) ensuring that crew scheduling complies with flight and duty time regulations;
- (J) ensuring that all crew members are kept informed of any changes to the regulations and standards;
- (K) the receipt and actioning of any aeronautical information affecting the safety of flight;
- (L) the dissemination of aeroplane safety information, both internal and external;
- (M) qualifications of flight crew member; and
- (N) maintenance of a current operations library.

NOTE:

In his or her absence, all responsibilities for operational duties shall be delegated to another individual qualified in accordance with Canadian Aviation Regulations except that the knowledge requirements detailed under Operations Manager qualifications may be demonstrated to the air operator rather than the minister.

(b) Chief Pilot

(amended 1998/06/01)

(i) Qualifications**(A) The chief pilot shall:**

(amended 1998/06/01)

(I) where VFR only is authorized by the air operator certificate, hold an Airline Transport Pilot Licence (Aeroplane) or a Commercial Pilot Licence (Aeroplane) appropriate for an aeroplane subject to this Subpart;

(amended 1998/06/01)

(II) where Day and Night VFR is authorized by the air operator certificate, hold an Airline Transport Pilot Licence (Aeroplane) or a Commercial Pilot Licence (Aeroplane), valid for night, and an Instrument Rating appropriate for an aeroplane subject to this Subpart; or

(amended 1998/06/01)

(III) where IFR is authorized by the air operator certificate, hold a valid Airline Transport Pilot Licence (Aeroplane) or in the case of an IFR centre line thrust aeroplane or single-engine operation, a valid Commercial Pilot Licence (Aeroplane) and a valid Instrument Rating appropriate for an aeroplane subject to this Subpart.

(amended 2003/06/01)

(B) In addition to the items set out in clause A, the chief pilot shall also:

(amended 1998/06/01)

(I) if applicable, hold a type rating for one of the types of aeroplanes operated;

(amended 1998/06/01)

(II) have at least 500 hours flight time of which 250 hours shall be as pilot-in-command within the preceeding 3 years on the same category and class of aircraft being operated;

(amended 2000/12/01)

(III) be qualified in accordance with the air operator's training program to act as a pilot-in-command on one of the types to be operated; and

(amended 1998/06/01)

(IV) demonstrate knowledge to the Minister with respect to the content of the *Company Operations Manual*, Training Manuals, Standard Operating Procedures (if applicable), *Company Check Pilot Manual* (if applicable), and the provisions of the Regulations and Standards necessary to carry out the duties and responsibilities of the position.

(amended 1998/06/01)

(C) The chief pilot's personal record in relation to aviation shall not include:
(amended 2003/06/01)

(I) any conviction under subsection 7.3(1) of the *Aeronautics Act*; or

(II) two or more convictions, occurring during separate unrelated events, under the *Canadian Aviation Regulations*.

NOTE:

A Chief Pilot qualified under Subpart 704 or 705 of the Canadian Aviation Regulations may serve as the Chief Pilot for Subpart 703 of the Canadian Aviation Regulations operations within the same company.

(ii) Responsibilities

The Chief Pilot is responsible for the professional standards of the flight crews under his authority, and in particular:

(A) developing standard operating procedures;

(B) developing or implementing all required approved training programs for the air operator's flight crews;

(C) issuing directives and notices to the flight crews as required;

(D) the actioning and distribution of accident, incident, and other occurrence reports;

(E) the processing and actioning of any crew reports;

(F) the supervision of flight crew; and

(G) assuming any responsibilities delegated by the Operations Manager.

NOTE:

In his or her absence, all responsibilities for operational duties shall be delegated to another individual qualified in accordance with the Canadian Aviation Regulations except that the knowledge requirements detailed under Chief Pilot qualifications may be demonstrated to the air operator rather than the Minister.

(c) Person Responsible for Maintenance

The person responsible for the maintenance control system shall be qualified in accordance with Section 726.03 of the *Commercial Air Service Standards*.

(3) Operational Support Services and Equipment

The requirement for operational support services and equipment will be dependent on the types of aeroplanes and the size and scope of the operation and shall include the following, as applicable:

- (a) operational control system requirements;
- (b) current flight operations publications including a copy of the *Aeronautics Act*, applicable *Canadian Aviation Regulations*, *Company Operations Manual*, *Maintenance Control Manual*, *Maintenance Procedures Manual* (if applicable), *Canada Flight Supplement*, *Water Aerodrome Supplement* (if applicable), *Airplane Flight Manuals*, *Aircraft Operating Manuals* (if applicable), *Standard Operating Procedures* (if applicable), *Aeronautical Information Publication*, *Minimum Equipment Lists* (if applicable), and appropriate maps and charts;
- (c) passenger and cargo handling requirements;
- (d) communications requirements;
- (e) provisions for handling dangerous goods;
- (f) weather availability requirements;
- (g) ground de-icing/anti-icing program requirements; and
- (h) aeroplane servicing facilities and ground handling equipment.

723.08 Contents of Air Operator Certificate

Navigation System Authorizations (refers to subparagraph 703.08(g)(i) of the Canadian Aviation Regulations)

(amended 1998/06/01)

(1) Minimum Performance Capability for Long Range Area Navigation System

To meet the requirements of this standard, a long range area navigation system shall, as a minimum:

- (a) have a standard deviation of lateral track deviations of less than 6.3 nautical miles;
- (b) have a proportion of the total flight time spent by the aircraft 30 nautical miles or more from cleared track of less than 5.3×10^{-4} ;
- (c) have a proportion of the total flight time spent by aircraft at or between 50 and 70 nautical miles from the cleared track of less than 1.3×10^{-4} ; and
- (d) in paragraphs 723.08(2)(c) and (d) below, if a GPS receiver(s) provides the only means of long range navigation, then the requirements of FAA Document No. 8110.60, *GPS as a Primary Means of Navigation in Oceanic/Remote Operations* must be met.

(2) Authorizations

(a) Required Navigation Performance Capability (RNP) Airspace

The standard requirements for authorization to flight plan published high level fixed RNAV routes in Required Navigation Performance Capability (RNP) airspace, or to be accommodated by Air Traffic Control (ATC) on other routes using RNP separation criteria, are:

- (i) aeroplanes equipped with at least two independent navigation systems, one of which being a long range area navigation system; and
- (ii) flight crew training on operation of the long range area navigation system in accordance with training pursuant to subsection 723.98 (21).

(b) Canadian Minimum Navigation Performance Specification (CMNPS) and RNP Airspace

The standard requirements for authorization to operate in Canadian Minimum Navigation Performance Specification (CMNPS) airspace, and to flight plan published high level fixed RNAV routes in Required Navigation Performance Capability (RNP) airspace, and to be accommodated by Air Traffic Control (ATC) on other routes using RNP separation criteria are:

- (i) aeroplanes with navigation equipment as follows:
 - (A) for aeroplanes operating only in domestic airspace on high level airways equipment in accordance with paragraph 605.18(j) of the *Canadian Aviation Regulations*;
 - (B) for aeroplanes operating only in domestic airspace on company approved routes or direct routes that begin and end within reception range of ground based nav aids, at least two independent navigation systems, one of which being a long range area navigation system;
 - (C) for aeroplanes operating in CMNPS airspace other than on high level airways, company approved routes and direct routings that begin and end within the reception range of ground based nav aids, two independent long range navigation systems;
- (ii) flight crew training on operation of the long range area navigation system(s) in accordance with training requirements set out in subsection 723.98 (21) of these Standards.

(c) North Atlantic Minimum Navigation Performance Specification (NAT MNPS), CMNPS and RNP-C Airspace

The standard requirements for authorization to operate in North Atlantic Minimum Navigation Performance Specification (NAT MNPS) airspace, CMNPS airspace, to flight plan published high level fixed RNAV routes in Required Navigation Performance Capability (RNP-C) airspace, and to be accommodated by Air Traffic Control (ATC) on other routes using RNP-C separation criteria are:

(i) subject to clauses (A) and (B) aeroplanes shall be equipped with at least two independent long range area navigation systems.

(A) aeroplanes equipped with at least two independent navigation systems, one of which being a long range area navigation system, may be approved for NAT MNPS operations restricted to routes approved for aeroplanes with one long range RNAV system; and

(B) aeroplanes equipped with at least two independent navigation systems based on short range ground transmitters may be approved for NAT MNPS operations restricted to routes approved for aircraft with no long range RNAV capability; and

(ii) flight crew training on operation of long range area navigation systems in accordance with training requirements set out in subsection 723.98 (21) of these Standards.

(d) Reduced Vertical Separation Minima (RVSM) Airspace
(amended 2003/03/01)

The standards for authorization to operate in Reduced Vertical Separation Minima (RVSM) airspace are:

(amended 2003/03/01)

(i) the aircraft shall be certified in accordance with the *ICAO/FAA Document 91-RVSM* and meet the other applicable technical requirements of *ICAO NAT DOC 001*,
(amended 2003/03/01)

(ii) the air operator shall comply with the *ICAO/FAA Document 91-RVSM* and meet the other applicable requirements of *ICAO NAT DOC 001*, and
(amended 2003/03/01)

(iii) the flight crew training shall be in accordance with the requirements of subsection 723.98(31).
(amended 2003/03/01)

(e) Pacific Required Navigation Performance 10 (RNP-10) Airspace
(amended 2002/12/01)

The requirements for authorization to operate in Pacific RNP-10 airspace are as follows:

- (i) the aircraft is equipped with at least two independent long range navigation systems capable of meeting a position accuracy of +/- 10 NM or better for 95% of the flight time in RNP-10 airspace,
- (ii) an RNP-10 time limit is established for aircraft equipped with only Inertial Navigation Systems (INS) or Inertial Navigation Units (INU), in order to meet the Pacific RNP-10 accuracy requirements,
- (iii) the aircraft meets the technical requirements of the navigation element of *FAA Order 8400.12A, Required Navigation Performance 10 (RNP-10) Operational Approval*,
- (iv) flight crew training is provided on the operation of the long range area navigation systems in accordance with the training requirements set out in subsection 723.98(21), and
- (v) flight crew training is provided on operations in Pacific RNP-10 airspace in accordance with the training requirements set out in subsection 723.98(30).

(3) Instrument Approaches - Global Positioning System (GPS)

(amended 1998/09/01)

(a) The standard requirements for authorization to fly instrument approach procedures using only GPS navigation information are:

- (i) an operational evaluation in accordance with subsection 723.08(3)(b) has been completed by the Minister on each aircraft type/GPS/FMS model installation for which approach authorization is sought;
- (ii) an air operator has an approved flight crew training and qualifications program for use of the GPS/FMS system that meets the requirements of subsection 723.98(21); and
- (iii) standard operating procedures have been amended to reflect GPS approach operations and approved by the Minister (where required).

(b) The following items will be assessed in the operational evaluation prior to the approval of the operator's GPS approach standard operating procedures (where applicable) and training program. Identical installations of the same model of GPS in the same type of aircraft with the same operator do not need separate evaluations.

(i) Database

The geographical coverage area for the database shall be compatible with the type of operations conducted by the company. The air operator shall have procedures in place to ensure that the database will be updated in accordance with the appropriate data revision cycle. This shall include a contract with a database supplier and the inclusion, in the appropriate company manuals, of the person responsible for installing the updates in the aircraft. The company shall have a procedure in place for pilots to report database errors and for information on database errors to be passed on to other company pilots, the avionics manufacturer and the Minister.

(ii) Unit Installation and Operation

The handling and procedures associated with the GPS avionics shall be such that all operations required for GPS approach can be accomplished without an adverse impact on normal crew duties and responsibilities. GPS related tasks shall not consume the attention of the pilot not flying (PNF) during critical phases of flight (i.e. between the time the aircraft turns inbound on the final approach course and the time the aircraft is established in the climb configuration on a missed approach).

A GPS avionics installation that is used on board aircraft operated under CARs Part VII, Subpart 3 (Air Taxi) conducting single-pilot IFR GPS approaches where persons other than flight crew are carried, shall be capable of:

(amended 2000/12/01)

(A) displaying a moving-map graphical depiction of the programmed route and the instrument procedure; and

(amended 2000/12/01)

(B) being coupled to the auto-pilot for lateral guidance and control of the aircraft during the IFR approach.

(amended 2000/12/01)

(iii) Control Display Unit (CDU) and Course Deviation Indicator (CDI) / Distance Display

If the GPS/FMS control unit is not adequately accessible from each pilot position, or if GPS course deviation and distance displays are not within the primary field of view at both pilot stations, air operators shall designate in the standard operating procedures the position that the pilot flying (PF) and pilot not flying (PNF) are required to occupy during GPS approach for that type of installation. Aircraft types that are certified for operation by two crew members shall have GPS course deviation and distance displays at each pilot station. An Operations Specification authorizing GPS approaches shall not be issued unless the PNF has a means acceptable, in the Minister's opinion, of monitoring the PF during an approach.

(iv) Distance Display on the HSI

Installations where GPS guidance information (course tracking, To/From and NAV flags) are switched onto the HSI for display, but the DME distance information is not switched out (i.e. DME distance, rather than GPS distance, is displayed continuously on the HSI even when GPS source is selected to HSI), shall require air operators, in their standard operating procedures for GPS approach, to deselect other NAV/DME sources to eliminate distance displays in the pilot's primary field of vision not related to the approach procedure being flown.

(v) Annunciation

Responses to system annunciation (including Receiver Autonomous Integrity Monitoring (RAIM) warnings), the means of selecting GPS track information to the CDI/HSI and the means of coupling GPS steering information to the aircraft automatic flight control system shall be compatible with the safe operation of the aircraft type/category. Standard operating procedures shall specify the procedure whereby the control unit is programmed, approach waypoints are verified against an independent source, approach mode is armed, and cockpit NAV source and AFC guidance source switches are selected and verified. Any switch selection or programming errors that the Minister believes are likely to occur and that could lead to a serious incident shall, if possible, be identified and addressed in training and in the standard operating procedures. Otherwise, the installation shall not be approved for approach use.

(vi) Airborne Evaluation

The Minister shall observe the pre-flight and in-flight operation of the unit on at least one GPS approach and missed approach. If the PF is allowed to occupy either seat during GPS approaches, then one approach from each pilot position shall be demonstrated. An airborne evaluation in an aircraft must take place under VFR. Emphasis will be on crew co-ordination, pilot workload (PF and PNF), and switch selections.

DIVISION III - FLIGHT OPERATIONS**723.15 *Scheduled Air Service Requirements***

The standard for scheduled operations into or out of an uncertified aerodrome is as follows: the operation shall be conducted under conditions established by the Minister which require the air operator and aerodrome operator to ensure a level of safety in respect to the use of the aerodrome that is equivalent to the level of safety established by Subpart 302 of the *Canadian Aviation Regulations*.

723.16 Operational Control System

Operations conducted under Subpart 703 of the *Canadian Aviation Regulations* require a Type D operational control system. Another organization may be contracted to exercise operational control on behalf of an air operator.

Type D

(1) General

(a) Application

For all operations under Air Taxi Operations.

(b) Responsibility and Authority

Operational control is delegated to the pilot-in-command of a flight by the Operations Manager who retains responsibility for the day-to-day conduct of flight operations.

(c) Centres

Current information on the location of the air operator's aeroplanes shall be maintained at the main base of operations, the sub-base or, where appropriate, from the location from which flight following is being carried out.

(d) Communications

Each aeroplane shall be equipped with serviceable and functioning communications equipment that permits the pilot-in-command to communicate with a ground radio station for the purpose of flight following. Such a ground station may be operated by the government, the air operator or a private agency.

(e) On Duty

A person, qualified and knowledgeable in the air operator's flight alerting procedures, shall be on duty or available when IFR or VFR at night flight operations are being conducted.

(2) Flight Following

Flight Following for a Type D system is the monitoring of a flight's progress and the notification of appropriate air operator and search-and-rescue authorities if the flight is overdue or missing.

Flight Following procedures and the standards of training and qualification for the individual performing this function shall be described in the air operator's *Company Operations Manual*.

(a) Each flight shall be conducted under an IFR Flight Plan, VFR Flight Plan or Flight Itinerary, as appropriate.

(b) The pilot-in-command is responsible for Flight Watch but shall be supported by an air operator Flight Following System that shall monitor the progress of each IFR flight or VFR

at night flight from its commencement to its termination, including any intermediate stops. The person performing the flight following function, who may be the same as in paragraph 1(e) above, shall be delegated to do so by the Operations Manager.

(c) The pilot-in-command shall be responsible for passing messages concerning aeroplane landings and departures from the point of origin, at enroute stops, and from the final destination in order to satisfy the requirements of paragraph 2(b) above.

723.18 Operational Flight Plan

(1) The air operator shall specify in its company operations manual, the format of the operational flight plan, how the operational flight plan will be recorded, and how formal acceptance of the operational flight plan by the pilot-in-command will be recorded
(amended 2008/12/30)

(2) The operational flight plan shall be either computer generated or produced manually
(amended 2008/12/30)

(3) The format of the operational flight plan shall
(amended 2008/12/30)

(a) display the requisite information as specified in the company operations manual

(b) provide the necessary space to make entries as the flight progresses; and

(c) permit the flight crew to record the progressive fuel state

(4) For day VFR operations, the ATC flight plan or flight itinerary may constitute the air operator's operational flight plan. The air operator shall specify in its company operations manual how day VFR operations are conducted and recorded
(amended 2008/12/30)

(5) For day VFR flights that originate and terminate on the same calendar day, at the same aerodrome, a company flight notification may be in the form of a notice board, wall map or similar flight information system at the base of operations
(amended 2008/12/30)

(6) Except for flights specified in subsection (5), a pilot-in-command shall carry on board a copy of the operational flight plan
(amended 2008/12/30)

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723.22 *Transport of Passengers in Single-Engined Aeroplanes*

The standard for transport of passengers in a single-engined aeroplane under IFR or VFR at night is:

(1) General

- (a) only factory built, turbine-powered aeroplanes are permitted;
- (b) the turbine-engine of the aeroplane type must have a proven Mean Time Between Failure (MTBF) of .01/1000 or less established over 100,000 hours in service; and
- (c) pilot training in accordance with subsection 723.98(24).
(amended 2000/12/01)

(2) Aeroplane Equipment Requirements

- (a) two attitude indicators which are powered separately and independently from each other;
- (b) two independent power generating sources, either of which is capable of sustaining essential flight instruments and electrical equipment;
- (c) an auto-ignition system, or alternatively, the *Company Operations Manual* must specify that continuous ignition must be selected "ON" for take-off, landing and flight in heavy precipitation;
- (d) a chip detector system to warn the pilot of excessive ferrous material in the entire engine lubrication system in all regimes of flight;
(amended 2003/06/01)
- (e) a radar altimeter;
- (f) a manual throttle which bypasses the governing section of the fuel control unit and permits continued unrestricted operation of the engine in the event of a fuel control unit failure;

(g) sufficient supplemental oxygen to allow for an optimal glide profile during an engine out let-down from 25,000 feet until a cabin altitude of 13,000 feet;
(amended 2003/06/01)

(h) an electronic means of rapidly determining and navigating to the nearest suitable aerodrome for an emergency landing; and
(amended 2003/06/01)

(i) sufficient emergency electrical supply to power essential electrical systems, including auto pilot flight instruments and navigation systems, following engine failure throughout the entirety of a descent at optimal glide speed and configuration from the aeroplane's operating level to mean sea level.
(amended 2003/06/01)

723.23 Aircraft Operating Over Water

Operations Specifications for over water flight are not applicable to the operation of aeroplanes.

723.24 Number of Passengers in Single-Engined Aeroplanes

Operations Specifications for carrying more than 9 passengers in a single-engine aircraft are not applicable to aeroplanes.

723.28 VFR Flight Minima - Uncontrolled Airspace

The standard for reduced VFR limits of one mile in uncontrolled airspace is as follows:

(1) Aircraft Equipment

The aeroplane shall be equipped with the following equipment:

(amended 1998/06/01)

(a) an artificial horizon;

(amended 1998/06/01)

(b) a directional gyro or gyro compass; and

(amended 1998/06/01)

(c) a Global Positioning System (GPS) navigation receiver.

(amended 1998/06/01)

(2) Pilot Experience

Before conducting operations at reduced visibility, pilots shall have achieved at least 500 hours of experience in Part VII or equivalent operations in the same category and class of aeroplane for which the authority is sought.

(amended 1998/06/01)

(3) Airspeed and Configuration for Operation in Reduced Visibility

Aeroplanes shall be operated at a speed such that obstacles can be seen and avoided. Aeroplane configuration for operations in reduced visibility shall conform to the Aircraft Flight Manual recommendations.

(4) Pilot Training

Pilots shall receive training as follows:

(amended 1998/06/01)

(a) initially and every three years thereafter, pilot decision making training which shall include the following topics:

(amended 2000/12/01)

(i) the decision making process, including modules on factors which affect good judgement;

(amended 2000/12/01)

(ii) human performance factors, including modules on physical, psychological and, physiological phenomena and limitations; and

(amended 2000/12/01)

(iii) human error countermeasures and good airmanship;

(amended 2000/12/01)

(b) one hour initial flight training and one hour annual recurrent flight training in basic instrument flying manoeuvres and flight at reduced airspeed; and

(c) initial training and annual recurrent training in the use of all equipment specified in subsection (1) above, and in all procedures specified in the *Company Operations Manual* for low visibility operations.

(5) *Company Operations Manual*

The *Company Operations Manual* shall contain the following information:

(amended 1998/06/01)

(a) a company-established minimum safe operational IAS and configuration for reduced visibility operations for each aeroplane type for which this authority is sought; and

(b) company low visibility operational procedures and considerations including, but not limited to:

(amended 1998/06/01)

(A) wind,

(B) gross weight and weather considerations,

- (C) route/terrain knowledge and/or restrictions (availability of forced landing areas, potential for white-out, etc.),
- (D) time of day restrictions (e.g., no low visibility operations at dawn or twilight), and
- (E) communications.

723.30 Take-off Minima

(1) Weather Below Landing Limits

The standard for conducting a take-off in IMC when weather conditions are at or above take-off, but below landing minima for the runway in use are:

(amended 1999/09/01)

- (a) the aeroplane is twin-engined or a single-engine aeroplane approved for operations under section 703.22 of the *Canadian Aviation Regulations*;
(amended 1998/06/01)
- (b) an alternate aerodrome is specified in the IFR flight plan; and
- (c) that aerodrome is located within the distance that can be flown in 60 minutes at the normal cruising speed.

(2) Weather Below Published Take-off Minima

The standard for take-off in a turbine-powered aeroplane in IMC below the weather minima specified in the *Canada Air Pilot* or in an equivalent foreign publication is:

(a) Take-off Minima Reported Visibility RVR 1200 feet (1/4 mile) - Aeroplanes with Certified Engine-out Take-off and Climb Performance

- (i) the *Company Operations Manual* shall contain detailed guidance on how to determine departure one engine inoperative climb gradient and obstacle clearance;
- (ii) a take-off alternate within 60 minutes flying time based on still air normal cruising speed is specified in the flight plan. The take-off alternate aerodrome weather minima shall meet the alternate requirements set out in the *Canada Air Pilot*;
- (iii) the runway is equipped as detailed in the manual of *Aerodrome Standards and Recommended Practices* with serviceable and functioning high intensity runway lights or runway centre-line lights or with runway centre-line markings that are plainly visible to the pilot throughout the take-off run;
- (iv) the pilot-in-command is satisfied that the required RVR 1200 feet or 1/4 mile visibility exists for the runway to be used before commencing take-off;
- (v) the pilot-in-command and second-in-command attitude instruments (artificial horizons) on the aeroplane shall incorporate pitch attitude index lines in appropriate increments above and below the zero pitch reference line to at least 15°, and are capable of ensuring ready depiction of total aeroplane attitude. An approved failure warning

system which will immediately detect essential instrument and equipment failures or malfunctions shall be installed and operative. For the purpose of reduced visibility take-offs, essential instruments are defined as attitude indicators, directional gyros and Horizontal Situation Indicators (HSI);

(vi) the flight crew members shall be given training in accordance with subsection 723.98(20) as applicable;
(amended 2003/06/01)

(vii) the chief pilot has certified in the document certifying qualifications and proficiency that the pilot-in-command is competent to conduct an RVR 1200 feet (1/4 mile) take-off; and

(viii) the pilot-in-command shall have at least 100 hours of pilot-in-command experience on the aeroplane type.

(b) Takeoff Minima Reported Visibility RVR 1200 feet (1/4 mile) - Aeroplanes without Certified Engine-out Take-off and Climb Performance

The following requirements must be met:

(i) the *Company Operations Manual* shall contain detailed guidance on how to determine single-engine climb gradient and obstacle clearance;

(ii) a take-off alternate within 60 minutes flying time based on still air normal cruising speed is specified in the flight plan. The take-off alternate aerodrome weather minima shall meet the alternate requirements set out in the *Canada Air Pilot*;

(iii) the takeoff weight of the aeroplane shall not exceed the weight determined from the Aeroplane Flight Manual that, considering the runway characteristics and ambient weather conditions, meets the following requirements:

(A) the required Accelerate-Stop Distance shall not exceed Accelerate-Stop Distance Available (ASDA); and

(B) the required engine-out take-off distance shall not exceed Take-off Distance Available (TODA).

NOTE:

Where the manufacturer does not provide data for single-engine take-off distance, but provides data for engine-out climb in the take-off configuration, the aeroplane weight shall permit a positive rate of climb using the configuration and speed at liftoff.

(iv) the runway is equipped as detailed in the manual of *Aerodrome Standards and Recommended Practices* with serviceable and functioning high intensity runway lights or runway centre-line lights or with runway centre-line markings that are plainly visible to the pilot throughout the take-off run;

(v) the pilot-in-command is satisfied that the required RVR 1200 (1/4 mile) visibility exists for the runway to be used before commencing take-off;

(vi) the pilot-in-command and first officer attitude instruments (artificial horizons) on the aeroplane shall incorporate pitch attitude index lines in appropriate increments above and below the zero reference line to at least 15°, and are capable of ensuring ready depiction of total aeroplane attitude. An approved failure warning system which will immediately detect essential instrument and equipment failures or malfunctions shall be installed and operative. For the purpose of reduced visibility take-offs, essential instruments are defined as attitude indicators, directional gyros and HSI's;

(vii) the flight crew members shall be given training in accordance with subsection 723.98(20), as applicable, and must also complete annual training in a simulator for the type, certificated to Level B or higher, during which RVR 1200 take-offs are practiced;

(amended 2003/06/01)

(viii) the Chief Pilot has certified in the document certifying qualifications and proficiency that the pilot-in-command is competent to conduct an RVR 1200 feet (1/4 mile) visibility take-off; and

(ix) the pilot-in-command shall have at least 100 hours of pilot-in-command experience on the aeroplane type.

723.31 No Alternate Aerodrome - IFR Flight

Operations Specifications for IFR flight where an alternate aerodrome is not designated in the IFR flight plan or in the IFR flight itinerary are not applicable to the operation of aeroplanes.

723.33 VFR OTT (Over the Top) Flight

The following standard shall be complied with for flights operating VFR OTT:

(1) the flight shall be conducted in accordance with the requirements of Section 602.116 of the *Canadian Aviation Regulations*;

(2) for multi-engined aeroplanes where the pilot holds a valid Instrument Rating for the group of aeroplane, the flight shall be operated under conditions allowing descent under VMC or continuation of the flight under IFR or VMC if its critical engine fails;

(3) for multi-engined aeroplanes where the pilot does not hold a valid Instrument Rating for the group of aeroplane, or that can not comply with (2) above, and for single-engine aeroplanes, the flight shall be operated under conditions allowing:

- (a) for multi-engined aeroplanes, descent under VMC, or continuation of the flight under VMC conditions if its critical engine fails;
- (b) for single-engined aeroplanes, descent under VMC if its engine fails.

723.34 Routes in Uncontrolled Airspace

The standard for establishing routes in uncontrolled airspace is:

(1) A minimum obstruction clearance altitude (MOCA) shall be established for each route segment by the use of aeronautical charts and the *Canada Flight Supplement* for updating of significant obstructions as follows:

- (a) for flight under IFR, a minimum altitude of 2000 feet above the highest obstacle located within a horizontal distance of 10 miles from the centre line of the route; and
- (b) for flight at night in VFR conditions, a minimum altitude of 1000 feet above the highest obstacle located within 3 miles from the centre line of the route.

(2) For each route segment a minimum enroute altitude (MEA) shall be established which meets or exceeds the minimum obstruction clearance altitude and assures navigational signal coverage. For line of sight navigation aid reception distance, for ground installed aids, the minimum reception altitude may be calculated by calculating the square root of an altitude above the navigation aid and multiplying the result by 1.25 (Sq. root 3000 ft. is 54.7 x 1.25 = 68 miles). The MEA will be established to the nearest higher 100 foot increment.

(3) Each route shall include:

- (a) the FROM/TO route segment;
- (b) track;
- (c) MOCA;
- (d) MEA;
- (e) distance between fixes or waypoints; and
- (f) navigation aids.

(4) The air operator shall maintain a record of the company routes in a form and format similar to the catalogue of approved routes.

Provided the above procedures are followed, an air operator's pilot may use routes that are not yet contained in the record of company routes.

(5) Prior to initial use of other than a publicly available navigation aid, permission of the owner/operator shall be obtained and retained in company records. No VFR at night or IFR flights shall commence unless the navigation aids upon which the route is predicated are in satisfactory operating condition or the flight is conducted using an approved long range navigation system.

When company routes are predicated on other than publicly available navigation aids and arrangements have not been made with the owner/operator to advise when the navigation aid is out of service, instructions to pilots shall be included on how, and whom to contact, to confirm that the navigation aid is in service.

(6) The air operator's *Company Operations Manual* shall be amended to outline the above procedures and information for pilot guidance.

(7) The flight visibility shall not be less than 3 miles for flights in VFR at night.

NOTE:

Pilot training for Area Navigation Systems is contained in subsection 723.98(21)

723.37 Weight and Balance Control

The weight and balance system required by Section 703.37 of the *Canadian Aviation Regulations* shall specify for each flight how the air operator will establish and be responsible for the accuracy of:

(amended 1998/06/01)

(1) aeroplane basic empty weight and centre of gravity determined in accordance with the Airplane Flight Manual;

(2) aeroplane operational empty weight and centre of gravity. The aeroplane operational empty weight is the actual weight of the aeroplane before loading for dispatch consisting of the aeroplane basic empty weight and may include removable equipment, flight crew members and crew members (including baggage), oil, unusable fuel and emergency equipment and shall be defined by the air operator;

(3) weight of passengers, carry-on baggage and checked baggage, where the weight of passengers and carry-on baggage is determined either by actual weight, or by using segmented weight values, either as published, or derived from statistically meaningful data using a methodology acceptable to the Minister, and where the weight of checked baggage and cargo is determined by actual weight;

(amended 2012/06/30)

(4) weight of the fuel load determined by using either the actual specific gravity or a standard specific gravity;

(5) aeroplane loading including, but not limited to, compartment weight and bulk cargo limits, floor loading limits, cargo restraint and loading considering weight and centre of gravity limits;

(6) aeroplane zero fuel weight, (as applicable);

(7) location of the centre of gravity to include the longitudinal position and where required, lateral and vertical positions;

(8) preparation and disposition of all required documentation whether by the air operator or other qualified personnel authorized by the air operator; and

(9) the training, both initial and recurrent, of all air operator personnel and other qualified personnel authorized by the air operator with duties and responsibilities in this system. The training shall be in the appropriate parts of the *Company Operations Manual*.

The weight and balance computation may be incorporated in the operational flight plan or be a separate form.

723.38 Passenger and Cabin Safety Procedures

(1) Safe Movement of Passengers to and from the Aeroplane

The procedures for the safe movement of passengers to and from the aeroplane shall include:

(a) wherever possible, aeroplanes are parked in a location that avoids passenger exposure to hazardous conditions;

(b) passengers are alerted to hazardous conditions;

(c) guidance, and where necessary an escort, to ensure passengers are directed along a safe route to or from the aeroplane;

(d) smoking restrictions are enforced;

(e) personal headsets that are used with personal entertainment systems that decrease awareness of other traffic or limit reception of audible direction or warning signals are not worn;

(amended 1999/09/01)

(f) passengers are briefed on how to safely emplane and deplane when aircraft engines are running; and

(amended 1998/06/01)

(g) passengers on float planes are alerted to hazards unique to emplaning and deplaning these aircraft.

(amended 1998/06/01)

(2) Fuelling with Passengers on Board

Aeroplanes may be fuelled with passengers on board, embarking or disembarking under the following conditions:

(a) the pilot supervises the fuelling and remains near the aeroplane main exit to immediately communicate with and assist the evacuation of passengers in an emergency;

(b) all exits are clear of obstruction and available for passenger evacuation;

- (c) the aeroplane engines are not running unless the aircraft incorporates a propeller brake and the brake is set. Procedures must be included in the Aircraft Flight Manual for the use of the prop brake while refuelling;
- (d) electrical power supplies are not being connected or disconnected, and any equipment likely to produce sparks or arcs is not being used;
- (e) smoking is not permitted in the aeroplane or in the vicinity of the aeroplane;
- (f) fuelling is suspended when there are lightning discharges within 8 km of the aerodrome;
- (g) combustion heaters in the aeroplane or in the vicinity of the aeroplane are not operated;
- (h) known high energy equipment such as High Frequency (HF) radios and weather-mapping radar are not operated, unless in accordance with the aeroplane manufacturer's approved flight manual where the manual contains procedures for the use of this equipment during fuelling; and
- (i) photographic equipment is not used within 10 feet (3 m) of the fuelling equipment or the fill or vent points of the aeroplane fuel systems.

(3) Use of Portable Electronic Devices

The prohibited devices, the permitted devices without restrictions and the permitted devices with restrictions are defined as follows, and are to be used in accordance with the stated requirements as applicable:

(amended 1998/06/01)

(a) Prohibited devices:

Any transmitting device that intentionally radiates radio frequency signals;

(b) Permitted devices without restrictions:

- (i) hearing aids,
- (ii) heart pacemakers,
- (iii) electronic watches, and
- (iv) properly certificated air operator installed equipment;

(c) Permitted devices with restrictions:

- (i) personal life support systems may be operated during all phases of flight, provided that the device does not cause interference with the aircraft's systems or equipment;
- (ii) portable two-way radio communication devices may be used subject to all of the following conditions and restrictions being met:

(A) use is prohibited at all times when the aircraft engines are running, excluding the auxiliary power unit,

(B) when the pre-flight safety briefing begins prior to engine start, use is terminated during the delivery of the pre-flight safety briefing and demonstration, and

(C) the company operations manual contains procedures to ensure these devices are turned off and properly stowed during the delivery of the pre-flight safety briefing and demonstration and while the aircraft engines are running;

(iii) other portable electronic devices may be used, except during take-off, climb, approach and landing.

(4) Passengers shall be informed of the air operator's policy pertaining to the use of portable electronic devices and those devices that are prohibited from use during the delivery of the pre-flight safety briefing and demonstration.

(amended 1998/06/01)

(5) When interference with the aircraft's systems or equipment is suspected from use of a portable electronic device, crew members shall:

(amended 1998/06/01)

(a) confirm passenger use of portable electronic device(s),

(b) instruct passenger(s) to terminate the use of portable electronic device(s),

(c) prohibit the use of suspected portable electronic device(s); and

(d) recheck the aircraft's systems and equipment.

(6) The pilot-in-command shall report incidents of portable electronic device interference and include the following information in the report:

(amended 1998/06/01)

(a) Flight Information - aircraft type, registration, date and UTC time of incident, aircraft location (VOR bearing/DIST/LAT/LONG), altitude, weather conditions, pilot name and telephone number,

(b) Description of Interference - description of effects on cockpit indicators, audio or systems, including radio frequency, identification, duration, severity and other pertinent information,

(c) Action Taken by Pilot/Crew to Identify Cause or Source of Interference,

(d) Identification of Portable Electronic device - description of device, brand name, model, serial number, mode of operation (i.e. FM radio), device location (seat location), and regulatory approval number (FCC/other),

(e) Identification of User - name and telephone number of passenger operating the device, and

(f) Additional Information - as determined pertinent by the crew.

(7) Reports of portable electronic device interference shall be submitted to the Director, Safety Services, Transport Canada, Transport Canada Building, Place de Ville, Ottawa, Ontario K1A 0N8.

(amended 1998/06/01)

723.39 Briefing of Passengers

(1) Standard Safety Briefing

The standard safety briefing shall consist of an oral briefing provided by a flight crew member or by audio or audiovisual means which includes the following information as applicable to the aeroplane, equipment, and operation:

(a) prior to take-off:

- (i) when, where, why and how carry-on baggage is required to be stowed;
- (ii) the fastening, unfastening, adjusting and general use of safety belts or safety harnesses;
- (iii) when seat backs must be secured in the upright position and tables stowed;
- (iv) the location of emergency exits, and for passengers seated next to an exit, how that exit operates;
- (v) the location, purpose of, and advisability of reading the safety features card;
- (vi) the regulatory requirement to obey crew instructions regarding seat belts and no smoking or Fasten Seat Belts and No Smoking signs and the location of these signs;
- (vii) the location of any emergency equipment the passenger may have a need for in an emergency situation such as the ELT, fire extinguisher, survival equipment (including the means to access if in a locked compartment), first aid kit and life raft;
- (viii) the use of passenger operated portable electronic devices;
- (ix) the location and operation of the fixed passenger oxygen system, including the location and presentation of the masks; the action to be performed by the passenger in order to obtain the mask, activate the flow of oxygen and correctly don and secure the mask. This will include a demonstration of their location, method of donning (including the use of elastic band), operation, and instruction on the priority for persons assisting others; and
- (x) the location and use of life preservers, including how to remove from stowage/packaging and a demonstration of their location, method of donning and inflation, and when to inflate life preservers;

(b) after take-off, if not included in the pre-take-off briefing:

- (i) that smoking is prohibited; and
- (ii) the advisability of using safety-belts or safety harnesses during flight;

(c) in-flight because of turbulence:

- (i) when the use of seat belts is required; and
- (ii) the requirement to stow carry-on baggage;

(d) prior to passenger disembarkment, the safest direction and most hazard-free route for passenger movement away from the aeroplane following disembarkment; and any dangers associated with the aeroplane type such as pitot tube locations, propellers, or engine intakes; and

(e) where no additional passengers have embarked the flight for subsequent take-offs on the same day, the pre-take-off and after take-off briefing may be omitted provided a crew member has verified that all carry-on baggage is properly stowed, safety belts or harnesses are properly fastened, and seat backs and chair tables are properly secured.

(2) Individual Safety Briefing

The individual safety briefing shall include:

(a) any information contained in the standard safety briefing and the safety features card that the passenger would not be able to receive during the normal conduct of that safety briefing; and

(b) additional information applicable to the needs of that person as follows:

- (i) the most appropriate brace position for that passenger in consideration of his/her condition, injury, stature, and/or seat orientation and pitch;
- (ii) the location to place any service animal that accompanies the passenger;
- (iii) for a mobility restricted passenger who needs assistance in moving expeditiously to an exit during an emergency:
 - (A) a determination of what assistance the person would require to get to an exit;
 - (B) the route to the most appropriate exit;
 - (C) the most appropriate time to begin moving to that exit; and
 - (D) a determination of the most appropriate manner of assisting the passenger;
- (iv) for a visually impaired person:
 - (A) detailed information of and facilitating a tactile familiarization with the equipment that he/she may be required to use;
 - (B) advising the person where to stow his/her cane if applicable;

- (C) the number of rows of seats between his/her seat and his/her closest exit and alternate exit;
- (D) an explanation of the features of the exits; and
- (E) if requested, a tactile familiarization of the exit;
- (v) for a comprehension restricted person:
 - (A) while using the safety features card, point out the emergency exits and alternate exits, and any equipment that he/she may be required to use;
- (vi) for persons with a hearing impairment:
 - (A) while using the safety features card, point out the emergency exits and alternate exits to use, and any other equipment that the person may be required to use; and
 - (B) communicating detailed information by pointing, face-to-face communication permitting speech reading, pen and paper, through an interpreter or through their attendant;
- (vii) for a passenger who is responsible for another person on board, information pertinent to the needs of the other person as applicable:
 - (A) in the case of an infant:
 - (I) seat belt instructions;
 - (II) method of holding infant for take-off and landing;
 - (III) instructions pertaining to the use of a child restraint system;
 - (IV) oxygen mask donning instructions;
 - (V) recommended brace position; and
 - (VI) location and use of life preservers, as required;
 - (B) in the case of any other person:
 - (I) oxygen mask donning instructions;
 - (II) instructions pertaining to the use of a child restraint system; and
 - (III) evacuation responsibilities;

(viii) for an unaccompanied minor, instructions to pay close attention to the normal safety briefing and to follow all instructions.

NOTES:

(a) A passenger that has been provided with an individual safety briefing need not be re-briefed following a change in crew if the crew member that provided the individual safety briefing has advised a member of the new crew of the contents of that briefing including any information respecting the special needs of that passenger.

(b) A passenger may decline an individual safety briefing.

(3) Passenger Preparation for an Emergency Landing

The emergency briefing provided in the event of an emergency, where time and circumstances permit, shall consist of instructions pertaining to:

- (a) safety belts or safety harnesses;*
- (b) seat backs and tables;*
- (c) carry-on baggage;*
- (d) safety features cards;*
- (e) brace position (when to assume, how long to remain);*
- (f) life preservers, (as applicable); and*
- (g) if applicable, evacuation procedures for an occupant of a child restraint system.*

(amended 1999/09/01)

(4) Safety Features Card

The safety features card shall contain the following information as applicable to the aeroplane and equipment carried:

- (a) general safety information including:*
 - (i) smoking is prohibited on board the aeroplane;*
 - (ii) each type of safety belt or safety harness installed for passenger use, including when to use, and how to fasten, tighten and release;*
 - (iii) when and where carry-on baggage must be stowed and any other related requirements and restrictions pertinent to the particular aeroplane; and*
 - (iv) correct positioning of seat backs and tables for take-off and landing.*

(b) emergency procedures and equipment including:

(i) fixed passenger oxygen system showing:

(A) mask location and presentation; the actions to be performed by the seated passenger in order to obtain the mask, activate the flow of oxygen and correctly don and secure the mask; and

(B) priority for persons assisting others with oxygen;

(ii) location of first aid kits;

(iii) location of fire extinguishers that would be accessible to the passengers;

(iv) location of Emergency Locator Transmitters;

(v) location of survival equipment and, if the stowage compartment is locked, the means of access or location of the key;

(vi) passenger brace position for impact, as appropriate for each type of seat and restraint system installed for passenger use; including the brace position for an adult holding an infant;

(vii) the location, operation and method of using each exit on the aeroplane;

(viii) the safest direction and most hazard-free escape route for passenger movement away from the aeroplane following evacuation;

(ix) the attitude of the aeroplane while floating;

(x) location of life preservers and correct procedures for removal from stowage/packaging; donning and use of the life preservers for adult, child and infant users including when to inflate;

(xi) location and use of life rafts, (as applicable); and

(xii) location, removal and use of flotation devices;

(c) The safety features card shall bear the name of the air operator and the aeroplane type and shall contain only safety information; and

(d) The safety information provided by the card shall:

(i) be accurate for the aeroplane type and configuration in which it is carried and in respect of the equipment carried;

(ii) be presented with clear separation between each instructional procedure. All actions required to complete a multi-action procedure are to be presented in correct sequence and the sequence of actions are to be clearly identified; and

(iii) be depicted in a clear and distinct manner.

723.41 Instrument Approach Procedures
(amended 2006/12/01)

Stabilized Constant-Descent-Angle (SCDA) Non-Precision Approach

In order to conduct a stabilized constant descent angle (SCDA) non-precision approach, the following requirements shall be met:

- (a) the air operator's flight crew training and qualifications program includes SCDA non-precision approach in accordance with section 703.98 of the *Canadian Aviation Regulations*;
- (b) the air operator's standard operating procedures incorporate SCDA non-precision approach in accordance with section 703.107 of the *Canadian Aviation Regulations*, and the procedures include a specified amount to be added to the MDA to compensate for the additional height loss during the missed approach initiation during approaches where
 - (i) there is a failure of an aircraft system,
 - (ii) the aircraft is above normal maximum landing weight,
 - (iii) the aircraft landing weight is limited by aborted landing climb performance, or
 - (iv) height loss could be expected to be larger than normal;
- (c) the final approach course does not differ from the runway centreline direction by more than 15 degrees; and
- (d) the descent angle from the planned final approach fix (FAF) crossing altitude to the target touchdown point on the runway is not less than 2.9 degrees and not more than 3.5 degrees.

**DIVISION IV - AIRCRAFT PERFORMANCE
OPERATING LIMITATIONS**

There are currently no standards published for this division.

**DIVISION V - AIRCRAFT EQUIPMENT
REQUIREMENTS**

There are currently no standards published for this division.

DIVISION VI - EMERGENCY EQUIPMENT

723.82 *Equipment Standards and Inspection*

(1) Survival Equipment

(a) Flights Over Land

- (i) the *Company Operations Manual* shall show how compliance with Section 602.61 of the *Canadian Aviation Regulations* is to be achieved;
- (ii) a list of survival equipment shall be carried on board with information on how to use it;
- (iii) a survival manual appropriate for the season and climate shall be carried on board; and
- (iv) crew members shall be trained in accordance with subsection 723.98(24).

(b) Where life rafts are required to be carried, in accordance with Section 602.63 of the *Canadian Aviation Regulations*, they shall be equipped with an attached survival kit containing at least the following:

- (i) a pyrotechnic signalling device;
- (ii) a radar reflector;
- (iii) a life raft repair kit;
- (iv) a bailing bucket and sponge;
- (v) a signalling mirror;
- (vi) a whistle;
- (vii) a raft knife;
- (viii) an inflation pump;
- (ix) dye marker;
- (x) a waterproof flashlight;
- (xi) a two day supply of water, calculated using the overload capacity of the raft, consisting of one pint of water per day for each person or a means of desalting or distilling salt water sufficient to provide an equivalent amount;
- (xii) a fishing kit;
- (xiii) a book on sea survival; and
- (xiv) a first aid kit containing antiseptic swabs, burn dressing compresses, bandages and anti-motion sickness pills.

(2) First Aid Kit Contents

A first aid kit required by section 602.60 of the *Canadian Aviation Regulations* shall contain the supplies and equipment for a Type A kit set out in Schedule II of Part X of the *Aviation Occupational Safety and Health Regulations*. In addition, each kit shall contain one pair of protective non-permeable gloves made of latex or equivalent material.
(amended 2001/06/01)

DIVISION VII - PERSONNEL REQUIREMENTS

723.86 *Minimum Crew*

Single Pilot IFR Requirements

The standard for the operation of an aeroplane with passengers on board in IFR flight without a second-in-command is:

(1) the pilot shall have a minimum of 1000 hours of flight time which shall include, if the type to be flown is multi-engined, 100 hours on multi-engined aeroplanes. In addition, the pilot shall have 50 hours of simulated or actual flight in IMC, and a total of 50 hours flight time on the aeroplane type;

(2) the Pilot Proficiency Check shall be in the aeroplane type flown or if applicable in one of the types grouped for Pilot Proficiency Check renewals and shall include the following:

- (a) knowledge of the auto-pilot operations and limitations;
- (b) performance of normal and emergency procedures without assistance;
- (c) passenger briefing with respect to emergency evacuation; and
- (d) demonstration of the use of the auto-pilot during appropriate phases of flight;

(3) flight in pressurized aeroplanes shall be conducted at or below FL 250; and

(4) a pilot's single pilot proficiency, if still valid, is transferable between air operators which have an Air Operator Certificate authority to conduct such operations and utilize the same type and model of aeroplane.

723.88 *Flight Crew Member Qualifications*

(1) Pilot Proficiency Check

(a) The pilot proficiency check in an aeroplane shall be conducted in accordance with Schedule I of this subsection.

(b) A pilot proficiency check shall be conducted in a manner that enables the pilot to demonstrate the knowledge and the skill respecting:

- (i) the aeroplane, its systems and components;

(ii) proper control of airspeed, direction, altitude, attitude and configuration of the aeroplane, in accordance with normal, abnormal and emergency procedures and limitations set out in the aeroplane operating manual (where applicable), the aeroplane flight manual, the air operator's *Company Operations Manual*, the air operator's standard operating procedures, the check list, and any other information relating to the operation of the aeroplane type;

(iii) departure, enroute and arrival instrument procedures (if applicable); and

(iv) adherence to approved procedures.

(c) Each manoeuvre or procedure within a phase of flight specified in Schedule I to this subsection shall be performed in the aeroplane or synthetic flight training device.

(d) A pilot-in-command check shall be completed in the seat normally occupied by the pilot-in-command and a second-in-command check shall be completed in the seat normally occupied by the second-in-command.

(e) A Transport Canada inspector or an approved company check pilot shall determine whether a person has demonstrated the knowledge and the skill in accordance with the following factors:

(i) the pilot's adherence to approved procedures; and

(ii) the pilot's qualities of airmanship in selecting a course of action.

(f) During the pilot proficiency check the person conducting the check may request any manoeuvre or procedure, from the Schedule, required to determine the proficiency of the candidate.

(g) A PPC must include a demonstration of instrument flight (IF) proficiency if:

(i) the candidate possesses a valid Instrument Rating; and

(ii) the candidate conducts commercial IFR operations on the aeroplane in which the PPC is conducted.

Where a pilot successfully completes the full pilot proficiency check, the pilot successfully completes the requirements for the renewal of the applicable instrument rating.

(h) Where an Air Operator's Certificate authorizes single-engine operation in IFR flight the pilot proficiency check shall include all items of Schedule I to this subsection which are relevant to a single-engined aeroplane.

(i) Where an air operator has been authorized aeroplane grouping for pilot proficiency checks (renewals only), Schedule II and Schedule III to this subsection shall be used to determine which aircraft can be grouped. The following standard shall apply:

(i) for a pilot to commence participating in an air operator's authorized aeroplane grouping, that pilot shall have passed within the preceding 12 months, in each type of

aeroplane in which that pilot will act as a flight crew member, the pilot proficiency check set out in Schedule I to this subsection;

(ii) the pilot must complete initial and annual recurrent ground and flight training, including written examinations on systems and limitations, for each type of aeroplane in which he/she will act as a flight crew member;

(iii) the annual PPC shall be completed and passed on one of the aeroplane types from the authorized group. A different type of aeroplane from the group shall be used each successive year for the conduct of the PPC;

(iv) a failure to pass the PPC on the selected aeroplane type shall be considered to be a failure on all the aeroplane group types flown by that pilot; and

(v) the document certifying qualifications and proficiency shall be endorsed for each aeroplane type.

NOTE:

*Grouping of PPC's (renewals only) is considered transportable from one air operator to another if the hiring operator has been authorized for grouping of the same aircraft types. As required in subsection 723.98(22), training shall be completed for each aeroplane type. Initial training and a PPC are required for any type on which the pilot is not current or has not previously served (see Section 723.91 - validity period).
(amended 2000/12/01)*

(j) The synthetic flight training device level of training and checking credits shall be approved by Transport Canada in the training program approval process for each aeroplane type. Training and checking procedures not approved for the synthetic flight training device shall be completed in the aeroplane.

(2) Competency Check

The standard for the Competency Check is:

(a) for pilots flying single-engine aeroplanes operated in Day VFR (passengers and cargo), IFR (cargo only) or night VFR (cargo only), the chief pilot, or a pilot delegated by the Chief Pilot, shall be responsible for the training and shall certify the competency of each pilot on the most complex single-engined aeroplane to be flown;

(amended 1998/06/01)

NOTE:

*Pilots flying single-engine IFR with passenger or night VFR with passenger require a PPC.
(amended 1998/06/01)*

(b) for pilots flying as second-in-command on multi-engined aeroplanes operating under IFR or VFR is as follows:

(i) where the aeroplane is type certified for two-pilot operation, the second-in-command shall complete a competency check;

(amended 1998/06/01)

(ii) where operation of the aeroplane requires a type rating, and the second-in-command does not possess the required rating, he/she shall complete an initial pilot proficiency check as the qualifying flight to obtain the type rating. The Chief Pilot, or a pilot delegated by the Chief Pilot, shall then be responsible for annual recurrent training and will certify the competency of the pilot on each multi-engined aeroplane type to be flown. If the second-in-command already possesses the required type rating, the Chief Pilot or his delegate will be responsible for initial and recurrent training and certification of competency for each type of aeroplane to be flown;

(amended 1998/06/01)

(iii) for all other multi-engined aeroplanes, the Chief Pilot, or a pilot delegated by the Chief Pilot, shall be responsible for the training and will certify the competency of the pilot on each multi-engined aeroplane type to be flown; and

(iv) the Chief Pilot or a pilot delegated by the Chief Pilot, shall certify the competency of the pilot immediately following completion of the last training flight before the pilot is released to line operations; and

(amended 2000/06/01)

(c) a pilot shall be certified as competent in the performance of those Pilot Proficiency Check items contained in Schedule I to subsection (1) above which are applicable to single-engined aeroplanes or multi-engined aeroplanes, as applicable, operating on wheels, floats or skis, as appropriate for the operation to be conducted.

(3) Use of Other than an Air Operator Employee Pilot for Training and Checking

Authority may be given for other than an air operator employee pilot to occupy a flight crew seat when training, or conducting initial operating experience training or flight checks on an air operator's pilots on a new aeroplane type in accordance with the following:

The pilot shall:

(a) provide a resume, proof of background on the type of aeroplane, and recent experience appropriate to the training to be given; and

(b) hold the appropriate licence, ratings and endorsement. Where the pilot holds a foreign pilot licence the licence and (as applicable) the instrument rating shall be validated by Transport Canada Aviation.

The pilot may be authorized to conduct pilot checks provided the requirements of the Company Check Pilot are met, with the exception of the minimum employment time with the air operator.

A foreign licensed pilot may be granted authority for training and checking only when a Canadian licensed pilot is not available.

SCHEDULE I - Pilot Proficiency Check (PPC)

(1) Pre-flight phase

(a) Flight Planning and Equipment Examination

- (i) Flight planning shall include a practical examination on the pilot's knowledge of standard operating procedures and the Aeroplane Flight Manual including performance charts, loading, weight and balance and Flight Manual Supplements; and
- (ii) The equipment examination shall show a practical knowledge of the airframe, engine, major components and systems including the normal, abnormal, alternate and emergency operating procedures and limitations relating thereto.

(b) Aeroplane Inspection

- (i) A pre-flight aeroplane inspection that includes:
 - (A) a visual inspection of the exterior and interior of the aeroplane, locating each item to be inspected and explaining the purpose of the inspection;
 - (B) the proper use of the pre-start, start and pre-taxi check lists; and
 - (C) checks of the appropriate radio communications, navigation and electronic equipment and selection of the appropriate communications and navigation frequencies prior to flight.

(2) Flight phase

(a) Taxiing

- (i) taxiing procedures including, where appropriate, sailing and docking procedures;
- (ii) a taxiing check including:
 - (A) the use of the taxiing check list;
 - (B) taxiing in compliance with clearances and instructions issued by the appropriate air traffic control unit or by the person conducting the pilot proficiency check; and
 - (C) where a second-in-command is undergoing the pilot proficiency check, outlined above to the extent practicable from the second-in-command position.

(b) Engine Checks

Engine checks shall be conducted as appropriate to the aeroplane type.

(c) Take-off

- (i) One normal take-off to be performed in accordance with the Airplane Flight Manual;
- (ii) An instrument take-off performed in the same manner as the normal take-off except that instrument flight rules are simulated at or before reaching an altitude of 200 feet above the airport elevation. Not required to be demonstrated where the Air Operator's Certificate authorizes operations under day VFR only, or the air operator assigns the pilot to day VFR flight only;
- (iii) Where practicable under existing meteorological, airport or airport traffic conditions, one crosswind take-off performed in accordance with the aeroplane operating manual where applicable;

NOTE:

Any or all of the above takeoffs may be combined.

- (iv) a simulated engine failure after take-off as follows:

- (A) where performed in a visual synthetic training device:
(amended 2005/06/01)

- (I) the simulated failure of the critical engine shall occur at the take-off safety speed plus 10 kts; or
(amended 2005/06/01)

- (II) the simulated failure of the critical engine shall occur at a speed greater than V1 and at an altitude of less than 50 feet AGL; or at a speed as close as possible to, but greater than V1 when V1 and V2, or V1 and Vr are identical; or
(amended 2005/06/01)

- (B) where performed in an aeroplane in flight, at a safe altitude as close to the take-off safety speed plus 10 kts, or V2 + 10 kts, as is safe and appropriate to the aeroplane type under the prevailing conditions; and
(amended 2005/06/01)

- (v) a rejected take-off:

- (A) performed in a Level A synthetic flight training device prior to reaching lift-off speed; or

- (B) explained by the candidate prior to the flight where the pilot proficiency check is conducted in an aeroplane.

(d) Instrument Procedures

Except where an Air Operator Certificate authorizes operation under day VFR only, or an operator assigns the pilot to day VFR flight only, instrument procedures shall consist of IFR pre-flight preparation, departure and enroute procedures, terminal procedures and system malfunctions.

- (i) An area departure and an area arrival procedure shall be performed where the pilot:
 - (A) adheres to actual or simulated air traffic control clearances and instructions; and
 - (B) properly uses the available navigation facilities;
- (ii) holding procedures;
- (iii) at least two instrument approaches performed in accordance with procedures and limitations in the *Canada Air Pilot* or in the equivalent foreign publications, or approved company approach procedure for the approach facility used. Where practicable one of the approaches shall be a precision approach and one a non-precision approach; and
- (iv) a circling approach except where local conditions beyond the control of the pilot prevent a circling approach from being performed.

(e) In Flight Manoeuvres

- (i) At least one steep turn in each direction with a bank angle of 45° and a change in heading of at least 180° but not more than 360°.

(ii) Approaches to stalls

For the purpose of this manoeuvre the required approach to a stall is reached when there is a perceptible buffet or other response to the initial stall entry. When performed in an aeroplane the approach to stalls shall be conducted at an altitude of at least 5000 feet AGL, and if conducted above cloud at an altitude of at least 2000 feet above the cloud tops.

The following approaches to the stall are required during initial and upgrade PPC's:

- (A) one in the take-off configuration, except where a zero-flap take-off configuration is normally used in that model and type of aeroplane;
- (B) one in a clean configuration; and
- (C) one in a landing configuration.

One of the approaches to stall shall be performed while in a turn with a bank angle of between 15° and 30°.

(f) Landings and Approaches to Landings

- (i) one normal landing which shall, where practicable, be conducted without external or internal glideslope information;
- (ii) one landing from an instrument approach, and where prevailing conditions prevent an actual landing, an approach to a point where a landing could have been made. Not required to be demonstrated where the Air Operator's Certificate authorizes operations under day VFR only, or the air operator assigns the pilot to day VFR flights only;
- (iii) one cross wind landing where practicable under existing meteorological, airport and airport traffic conditions;
- (iv) one missed approach;
(amended 2005/06/01)
- (v) where performed in a visual synthetic training device, one rejected landing. For the purposes of the rejected landing the landing shall be rejected at a height of approximately 50 feet when the aeroplane is approximately over the runway threshold. The rejected landing may be combined with a missed approach;
(amended 2005/06/01)
- (vi) one landing and manoeuvring to that landing with a simulated failure of 50 percent of the available engines; and
- (vii) one landing under simulated circling approach conditions except that where prevailing conditions prevent a landing, an approach to a point where a landing could have been made.

NOTE:

Any of the landings and approaches to landings specified in this section may be combined. A minimum of two landings are required.

(g) Normal Procedures

The pilot shall demonstrate or show knowledge of as many of the normal procedures as the person conducting the check finds are necessary to determine that the pilot has the knowledge and ability to properly use installed equipment. The demonstration of these procedures may be combined with in-flight manoeuvres. The following are examples of areas that may be examined:

- (i) anti-icing and de-icing systems;
- (ii) auto-pilot systems;
- (iii) automatic or other approach aid systems;

- (iv) stall warning devices, stall avoidance devices, and stability augmentation system;
- (v) airborne radar devices; and
- (vi) other systems, devices, or aids.

(h) Abnormal and Emergency Procedures

- (i) The pilot shall demonstrate the use of as many of the abnormal and emergency procedures as is necessary to confirm that the pilot has an adequate knowledge and ability to perform these procedures.
- (ii) System malfunctions shall consist of a selection adequate to determine that the pilot has satisfactory knowledge and ability to safely handle malfunctions.
- (iii) At least two simulated engine failures any time during the check.

SCHEDULE II - Grouping for PPC Purposes

Aeroplanes Having a MCTOW over 7000 lbs

Grouping is authorized for the following aeroplane types and models:

Aero Commander - 600 series turbine

Beech - 90 (A, B, C, E) 99, 100, A100

Beech - 100, A100, 200, B200

Beech - 200, B200, 300, F90

Piper Cheyenne - I, II, III

Piper Cheyenne - IV

Swearingen/Fairchild - All short-body SA226, SA227

Swearingen/Fairchild - All long-body SA226, SA227

Swearingen/Fairchild - SA226T, SA226TC and SA226AT

(amended 2000/06/01)

Note: *Groupings of aircraft that operate under both CARs 703 and 704 require all training to be done in accordance with subpart 724 of the Commercial Air Service Standards.*

(amended 2000/06/01)

SCHEDULE III - Grouping for PPC Purposes

Aeroplanes having a MCTOW of 7000 lbs and less

PPC groupings will be determined by Transport Canada using the methodology contained in Chapter One of TP 12993, The Common Qualification and Training Manual.

(amended 1998/06/01)

723.89 *Qualifications of Operational Control Personnel*

The standard for Operational Control Personnel is that contained in subsection 723.98(16).

(amended 1999/09/01)

723.91 *Validity Period*

(1) Where a flight crew member's training has expired for a period of 24 months or more, that crew member shall successfully complete the air operator's initial training program on the type of aeroplane.

(2) Where the flight crew member's pilot proficiency check or competency check has expired for a period of 24 months or more that flight crew member shall, following completion of the air operator's initial aeroplane ground and flight training, successfully complete the pilot proficiency check or competency check as applicable, on the type of aeroplane.

DIVISION VIII - TRAINING

723.98 *Training Programs*

The syllabus of each training program shall include the programmed time allotted and the subject matter to be covered.

(1) Training Standard General

(a) Manuals, if applicable, shall be provided during training to each trainee on the subject matter to be taught.

(b) Relevant training aids such as fire extinguishers, life preservers, rafts, aircraft components, static aircraft, etc. shall be available relevant to the program being presented.

(c) Comprehensive examinations shall be used to validate competence of the trainee.

(2) Flight Crew Training on a Contract Basis

An air operator may contract training to another organization provided:

(a) the arrangement is clearly provided for in the approved training program;

(b) the outside organization uses the manuals and publications used by the air operator (SOP's, Aircraft Flight Manual, Aircraft Operating Manual, if applicable, *Company Operations Manual*, etc.);

(c) the air operator ensures that the training is conducted in accordance with the approved program;

- (d) where type training is conducted the training is provided on the type and model operated by the air operator unless otherwise provided for in the approved training program; and
- (e) the air operator maintains training records as required by Subpart 703 of the *Canadian Aviation Regulations*.

(3) Training and Qualifications of Training Personnel

(a) Instructor - Ground Training

- (i) has satisfied the air operator that he/she has the knowledge and skills required to conduct the training; and
- (ii) if conducting aeroplane type training has successfully completed the ground school for the type of aeroplane.

(b) Qualifications and Responsibilities of a Training Pilot (Flight)

(i) Qualifications

(A) If the Air Operator Certificate authorizes operations IFR:

(I) hold a valid Airline Transport Pilot Licence and a valid Instrument Rating appropriate for the class of aeroplane, and have a valid PPC on type; or
(amended 2003/06/01)

(II) hold a valid Commercial Pilot Licence valid for night and a valid Instrument Rating appropriate for the class of aeroplane, have accumulated not less than 500 flight hours which shall include not less than 250 flight hours as pilot-in-command appropriate for the class of aeroplanes and have a valid PPC on type.
(amended 2003/06/01)

(B) If the Air Operator Certificate authorizes VFR at night:

(I) hold at least a valid Commercial Pilot Licence valid for night, and a valid Instrument Rating appropriate for the class of aeroplane; or

(C) If the Air Operator Certificate authorizes day VFR only:

(I) hold at least a valid Commercial Pilot Licence appropriate for the class of aeroplane.

(ii) Responsibilities

The Training Pilot is responsible for monitoring the operation and identifying problems which may require the provision of extra training or changes in operational procedures. The training pilot is responsible, together with the Chief Pilot, for the establishment and promulgation of the standards and piloting techniques with which flight crew will be expected to comply during flight operations and which the flight crew will be required to demonstrate during initial and recurrent checks. Particular responsibilities are:

- (A) conducting ground, synthetic flight training device and flight training of all flight crew in accordance with the approved training program;
- (B) supervision of the standards and recommending amendments to their respective aeroplane operating manuals and standard operating procedures;
- (C) maintaining the air operator's training records;
- (D) liaison with crew scheduling concerning training details; and
- (E) any responsibilities assigned by the Chief Pilot.

(c) Qualifications and Responsibility of a Training Pilot (Synthetic Training Device)**(i) Qualifications**

- (A) hold or have held at least a Commercial Pilot Licence or equivalent, and if the Air Operator's Certificate authorizes IFR an Instrument Rating appropriate for the class of aeroplane;
- (B) have completed the air operator's ground school and synthetic training device program for the type of aeroplane;
- (C) have successfully completed within the past 12 months a flight check to PPC standards in the synthetic training device or aeroplane for that type;
- (D) know the content of the Aeroplane Operating Manual (if applicable), Aeroplane Flight Manual, Operations and Training Manuals and as applicable the *Company Check Pilot Manual* and the air operator Standard Operating Procedures for the aeroplane type, and the provisions of the regulations and standards; and
- (E) have received instruction on the operation of the synthetic training device from an instructor qualified to operate the synthetic training device.

(ii) Responsibilities

(A) The Training Pilot is responsible for monitoring the operation and identifying problems which may require the provision of extra training or changes in operational procedures.

(B) The training pilot is responsible, together with the chief pilot, for the establishment and promulgation of the standards and piloting techniques with which flight crew will be expected to comply during flight operations and which the flight crew will be required to demonstrate during initial and recurrent checks. Particular responsibilities are:

(I) conducting ground and synthetic flight training of all flight crew in accordance with the approved training program;

(II) supervision of the standards and recommending amendments to their respective aeroplane operating manuals and standard operating procedures;

(III) maintaining the air operator's training records;

(IV) liaison with crew scheduling concerning training details; and

(V) any responsibilities assigned by the Chief Pilot.

NOTE:

The standard for the use of other than an air operator employee pilot for training and checking is in Section 723.88.

(4) Training Program Standards

Ground training programs shall provide a means of evaluating the trainee after completion of the syllabus by completion of examination with a review and correction of any errors. Training examinations should be comprehensive and periodically reviewed and updated.

Type training programs are to be titled as to the type to which they apply and include the number of instructional hours to be provided. They should be performance oriented and stress the operation (normal, emergency and malfunctions) of the aircraft systems and equipment. Instruction related to components and systems that flight crews cannot control, influence or operate should be minimized.

(5) Company Indoctrination Training

This training is required upon employment for all persons assigned to an operational control function including base managers, pilots and persons responsible for flight watch or flight following. The program shall ensure that persons involved in control of flight operations are aware of their responsibilities, know company reporting relationships and are competent to fulfil their assigned duties related to flight operations. Company indoctrination training shall include as applicable:

- (a) Canadian Aviation Regulations;*
- (b) Air Operator Certificate and Operations Specifications;*
- (c) company organization, reporting relationships and communication procedures including duties and responsibilities of the flight crew members and the relationship of their duties to other crew members;*
- (d) flight planning and operating procedures;*
- (e) fuelling procedures including procedures for fuelling with passengers on board and fuel contamination precautions;*
- (f) critical surface contamination and safety awareness program;*
- (g) passenger safety briefings and safe movement of passengers to/from the aeroplane;*
- (h) use and status of *Company Operations Manual* including maintenance release procedures and accident/incident reporting procedures;*
- (i) use of minimum equipment lists (if applicable);*
- (j) windshear, aeroplane icing, and other meteorological training appropriate to the area of operations;*
- (k) navigation procedures and other specialized operations applicable to the operator;*
- (l) accident/incident reporting;*
- (m) passenger on board medical emergency;*
- (n) handling of disabled passengers;*
- (o) carriage of external loads, (if applicable);*
- (p) operational control system; and*
- (q) weight and balance system procedures.*

(6) Technical Ground Training - Initial and Recurrent

This training shall ensure that each flight crew member is knowledgeable with respect to aeroplane systems and all normal, abnormal and emergency procedures. The following subjects shall be included:

- (a) aeroplane systems operation and limitations as contained in the aeroplane flight manual and aeroplane operating manual and standard operating procedures;
- (b) operation of all equipment that is installed in all aeroplanes of the same type operated by the air operator;
- (c) differences in equipment that is installed in all aeroplanes of the same type in the air operators fleet;
- (d) applicable standard operating procedures for pilot flying and pilot not flying duties for normal, abnormal and emergency procedures for the aeroplane;
- (e) aeroplane performance and limitations; and
- (f) weight and balance procedures;

Technical ground training shall be conducted annually.

(7) Synthetic Flight Training Device

(a) A Synthetic Flight Training Device has two classifications:

- (i) Full flight simulator (FFS); and
- (ii) Flight Training Device (FTD)

(8) Level A Training Program (if applicable)

An air operator with an approved Level A training program using a Level A or better FFS, approved in accordance with the *Aeroplane and Rotorcraft Simulator Manual*, is permitted to conduct most initial, upgrade and recurrent training in that simulator. Additionally, flight training in an aeroplane must be carried out for general handling and landing manoeuvres for initial and upgrade training.

- (a) The following training in standard operating procedures for normal, abnormal and emergency operation of the aeroplane systems and components shall be carried out in the FFS:
- (i) use of aeroplane checklists;
 - (ii) flight and cabin crew co-operation, command and co-ordination;
 - (iii) aeroplane and cargo fire on the ground and while airborne;
 - (iv) engine fire and failure;

- (v) effects of engine icing and anti-ice operation;
- (vi) take-off, landing and flight with the critical engine inoperative including driftdown and engine inoperative performance capabilities;
- (vii) on 3- and 4-engine aeroplanes inflight procedures including approach and landing with 2 engines inoperative (applies to P-I-C only);
- (viii) loss of pressurization and emergency descent (if applicable);
- (ix) flight control failures and abnormalities;
- (x) hydraulic, electrical and other system failures;
- (xi) failure of navigation and communication equipment;
- (xii) pilot incapacitation - recognition and response during various phases of flight;
- (xiii) approach to the stall and recovery procedure with ground contact imminent and ground contact not a factor (clean, take-off and landing configuration);
- (xiv) buffet boundary onset, steep turns (45° of bank), and other flight characteristics such as unusual attitudes (as applicable for initial and upgrade only);
- (xv) aeroplane performance for climb, cruise, holding, descent and landing;
- (xvi) normal, noise abatement and performance limited take-offs;
- (xvii) take-off and landing data calculations;
- (xviii) rejected take-off procedures and rejected landings;
- (xix) passenger and crew evacuation;
- (xx) FMS, GPWS, TCAS and other specialized aeroplane equipment (where available);
and
- (xxi) inadvertent encounters with moderate or severe in flight icing conditions.

(amended 1998/06/01)

(b) Where the air operator seeks authorization for flight in IMC the following training in flight planning and instrument flight procedures shall be included:

- (i) departure, enroute, holding and arrival; and
- (ii) all types of instrument approaches and missed approaches in minimum visibility conditions using all levels of automation available (as applicable).

(c) In addition to the training in an approved Level A FFS Training Program, the following flight training on the aeroplane type shall be carried out:

- (i) interior and exterior aeroplane preflight checks;
- (ii) ground handling for P-I-C;
- (iii) normal take-off, visual circuit (where possible) and landing;
- (iv) a simulated engine inoperative approach and landing;
- (v) simulated engine failure procedures during take-off and missed approach (at a safe altitude and airspeed);
- (vi) no electronic glide slope approach and landing; and
- (vii) circling (if applicable) and other approaches where the simulator lacks the capability.

(d) If a Level A flight simulator has differences in performance, systems, or cockpit layout and configuration from the air operator's aeroplane, additional training on these differences shall be provided.

(9) Level B Training Program (if applicable)

An air operator with an approved Level B training program using a Level B or better FFS, approved in accordance with the *Aeroplane and Rotorcraft Simulator Manual*, is permitted to conduct most initial, upgrade and recurrent training in that simulator. Additionally, flight training in an aeroplane must be carried out for general handling and landing manoeuvres for initial and upgrade training.

(a) The following training in standard operating procedures for normal, abnormal and emergency operation of the aeroplane systems and components shall be carried out in the FFS:

- (i) use of aeroplane checklists;
- (ii) flight and cabin crew co-operation, command and co-ordination;
- (iii) aeroplane and cargo fire on the ground and while airborne;
- (iv) engine fire and failure;
- (v) effects of engine icing and anti-ice operation;
- (vi) take-off, landing and flight with critical engine inoperative including driftdown and engine inoperative performance capabilities;
- (vii) on 3- and 4-engine aeroplanes inflight procedures including approach and landing with 2 engines inoperative (applies to P-I-C only);
- (viii) loss of pressurization and emergency descent (if applicable);

- (ix) flight control failures and abnormalities;
- (x) hydraulic, electrical and other system failures;
- (xi) failure of navigation and communication equipment;
- (xii) pilot incapacitation - recognition and response during various phases of flight;
- (xiii) recovery from turbulence and windshear on take-off and approach;
- (xiv) approach to the stall and recovery procedure with ground contact imminent and ground contact not a factor (in clean, take-off and landing configuration);
- (xv) buffet onset boundary, steep turns (45° bank), and other flight characteristics such as unusual attitudes (as applicable for initial and upgrade only);
- (xvi) aeroplane performance for climb, cruise, descent and landing;
- (xvii) normal, noise abatement and performance limited take-offs;
- (xviii) take-off and landing data calculations;
- (xix) rejected take-off procedures and rejected landings;
- (xx) passenger and crew evacuation;
- (xxi) FMS, GPWS, TCAS and other specialized aeroplane equipment (as applicable); and
- (xxii) inadvertent encounters with moderate or severe in flight icing conditions.

(amended 1998/06/01)

(b) Where the air operator seeks authorization for flight in IMC, the following training in flight planning and instrument flight procedures shall be included:

- (i) departure, enroute, holding and arrival; and
- (ii) all types of instrument approaches and missed approaches in minimum visibility conditions using all levels of automation available (as applicable).

(c) In addition to the training in an approved Level B Simulator Training Program, the following flight training on the aeroplane type shall be carried out:

- (i) interior and exterior aircraft preflight checks;
- (ii) ground handling for the P-I-C;
- (iii) normal take-off, visual circuit (where possible) and landing;
- (iv) a simulated engine inoperative approach and landing;
- (v) simulated engine failure procedures during take-off and missed approach (at a safe altitude and airspeed);
- (vi) no electronic glide slope approach and landing; and

(vii) circling (if applicable) and other approaches where the simulator lacks the capability.

(d) If a Level B flight simulator has differences in performance, systems, or cockpit layout and configuration from the air operator's aeroplane, additional training on these differences shall be provided.

(9.1) Level C Training Program (if applicable)

(amended 2006/06/30)

(a) For the purpose of this provision, "similar aeroplane" means both aeroplanes are subject to Subpart 703 and are

(i) turbo-prop to turbo-prop - provided both aeroplanes are certified as Transport Category Aeroplanes, or both aeroplanes are certified under FAR 23 Commuter or SFAR 41C or equivalent, as established by the Minister; or

(ii) reciprocating to reciprocating - provided both are certified for operations under Subpart 703;

(b) An air operator with an approved Level C training program using a Level C FFS approved in accordance with the *Aeroplane and Rotorcraft Simulator Manual*, is permitted zero flight time training for candidates on initial training who have at least second-in-command experience on a similar aeroplane with the same operator or who have verifiable line currency as a second-in-command on a similar aeroplane within the previous two years. Candidates who do not qualify shall undergo aeroplane flight training in accordance with those items listed in subparagraphs 723.98(8)(c)(i) to (vii) above;

(c) In addition to those items of training required in paragraphs 723.98(8)(a) and (b), the training in an approved Level C FFS shall include

(i) manoeuvring of the aeroplane on the ground;

(ii) crosswind take-offs and landings to 100% of the published crosswind component;

(iii) a visual training program in the flight simulator to ensure VFR flight skills, covering scenarios of dusk and night with variable weather and visibilities. This program shall include

(A) normal and crosswind take-offs, visual circuits and landings with variable wind, runway illusion and surface conditions;

(B) engine inoperative approach and landing;

(C) engine failure procedures during take-off and missed approach;

(D) no electronic glideslope approach and landing; and

(E) approaches and landings with flight control failures and abnormalities;

(iv) a simulated line flight comprising at least 2 sectors (one as pilot flying and another as pilot not flying);

(d) If a Level C FFS has differences in performance, systems, or cockpit layout and configuration from the air operator's aeroplane, additional training on these differences shall be provided.

(9.2) Level D Training Program (if applicable)

(amended 2006/06/30)

(a) An air operator with an approved Level D training program using a Level D FFS approved in accordance with the *Aeroplane and Rotorcraft Simulator Manual* is permitted zero flight time training;

(b) In addition to the training required for a Level C program, the following FFS training shall be carried out:

(i) A VFR training program in the Level D FFS of at least 4 hours per crew (2 hours as pilot flying (PF) and 2 hours as pilot not flying (PNF)) is required, to ensure visual flight skills to cover either day or dusk and night with variable weather and visibility scenarios. This program shall include the following:

(A) normal and crosswind take-offs, and visual circuits and landings, with variable wind, runway illusion and surface conditions;

(B) engine inoperative approach and landing;

(C) engine failure procedures during take-off and missed approach;

(D) no visual aids approaches and landings, and

(E) approaches and landings with flight control failures and abnormalities;

NOTE:

Where a pilot demonstrates a satisfactory level of performance in visual manoeuvres, the operator may use the time specified in subparagraph 723.98(9.2)(b)(i) as additional training to that required by any of the Level C requirements.

(ii) Simulated line flights of at least 2 sessions (2 sectors as pilot flying (PF) and 2 sectors as pilot not flying (PNF)) are required. Pilot flying duties shall be carried out from the appropriate seat;

(c) If a Level D FFS has differences in performance, systems, or cockpit layout and configuration from the air operator's aeroplane, additional training on these differences shall be provided.

(10) Aeroplane Flight Training Program

Any simulated failures of aeroplane systems shall only take place under operating conditions which do not jeopardize safety of flight.

(a) Standard Operating Procedures for normal, abnormal and emergency operation of the aeroplane systems and components including:

- (i) use of aeroplane checklists including interior and exterior pre-flight checks;
- (ii) manoeuvring of the aeroplane on the ground;
- (iii) aspects of flight and cabin crew co-operation, command and co-ordination;
- (iv) normal take-off, visual circuit, approach and landing;
- (v) simulated aeroplane and cargo fire on the ground and while airborne;
- (vi) simulated engine fire and failure;
- (vii) briefings on effects of airframe and engine icing and anti-ice operation;
- (viii) take-off, landing and flight with the critical engine simulated inoperative, including driftdown and engine inoperative performance capabilities;
- (ix) on 3- and 4-engine aeroplanes inflight procedures including approach and landing with 2 engines simulated inoperative (applies to P-I-C only);
- (x) simulated loss of pressurization and emergency descent;
- (xi) no electronic glide slope approach and landing;
- (xii) simulated hydraulic, electrical and other system failures;
- (xiii) simulated flight control failures and abnormalities;
- (xiv) simulated failure of navigation and communication equipment;
- (xv) simulated pilot incapacitation - recognition and response;
- (xvi) briefing on recovery from turbulence and windshear on take-off and approach;
- (xvii) approach to the stall and recovery procedure simulating ground contact imminent and ground contact not a factor (clean, take-off and landing configuration);
- (xviii) buffet onset boundary, steep turns (45° of bank) and other flight characteristics (as applicable for initial and upgrade only);
- (xix) aeroplane performance for climb, cruise, holding, descent and landing;

- (xx) normal and performance limited take-offs;
 - (xxi) crosswind take-off and landing, and briefing on contaminated runway take-off and landing;
 - (xxii) take-off and landing data calculations;
 - (xxiii) simulated rejected take-off procedures (at or below 60 kts) and rejected landings;
 - (xxiv) briefing on crew and passenger evacuation procedures; and
 - (xxv) other specialized aeroplane equipment (where applicable).
- (b) Flight planning and instrument flight procedures where the air operator is authorized for VFR flight at night or flight in IMC:
- (i) departure, enroute, holding and arrival; and
 - (ii) all types of instrument approaches and missed approaches in simulated minimum visibility conditions, including circling approaches (where applicable) using all levels of automation available (as applicable).

(11) Emergency Procedures Training for Pilots

This training is required on an annual basis and shall include instruction in the location and operation of all emergency equipment. Training devices approved to simulate flight operating emergency conditions, static aeroplanes, ground demonstrations, classroom lectures, films or other devices may be used for training provided the method used ensures that each flight crew member is adequately trained in the operation or use of all emergency equipment. Where practical training is required it shall be completed on initial training and every three years thereafter.

- (a) aeroplane fire in the air and on the ground;
- (b) use of fire extinguishers including practical training;
- (c) operation and use of emergency exits including practical training;
- (d) passenger preparation for an emergency landing or ditching (as applicable) including practical training;
- (e) emergency evacuation procedures including practical training;
- (f) donning and inflation of life preservers (when equipped) including practical training;
- (g) removal from stowage, deployment, inflation and boarding of life rafts/slide rafts (when equipped) including practical training;
- (h) pilot incapacitation including practical training;
- (i) hijacking, bomb threat and other security procedures;

- (j) passenger on board medical emergency; and
- (k) special emergency procedures when the aeroplane is used on MEDEVAC operations including patient evacuation in emergency situations.

(12) Regaining Qualifications Training

For operators using a Level B, C, D FFS approved in accordance with the *Aeroplane and Rotorcraft Simulator Manual*, or the aeroplane, the following must be completed for all pilots who have not maintained their recency qualifications in accordance with paragraph 703.88(1)(b) of the *Canadian Aviation Regulations* for a period between 90 days and 12 months:

(amended 2000/12/01)

- (a) a briefing on changes that have occurred to the aeroplane or its operation since the last flight; and
- (b) three take-offs and landings (which may be carried out as part of a PPC where one has come due).

(13) Regaining Qualifications after PPC Expiry

(a) Where the PPC has expired for less than 6 months the following must be completed to regain type qualification:

- (i) all the requirements specified by subsection (12) above; and
- (ii) any recurrent training, including a PPC, which may have come due during the absence from flying duties.

(b) Where the PPC has expired from between 6 and 24 months the following must be completed to regain type qualification:

- (i) all the requirements of paragraph (13)(a) above; and
- (ii) a technical ground training course consisting of an aeroplane system review and FTD training (where applicable).

(c) Where the PPC has expired for a period greater than 24 months a complete initial aeroplane type training course shall be carried out.

(14) Right Seat Conversion Training

(a) For a left seat-qualified pilot to operate an aeroplane from the right seat, the pilot shall:
(amended 2000/12/01)

(i) be qualified as a captain or pilot-in-command and be current on the aeroplane type for left seat duties,
(amended 2000/12/01)

(ii) receive sufficient technical ground training on right seat duties,
(amended 2000/12/01)

(iii) have, in the initial training received after January 1, 2001, sufficient flight or FFS training to enable a Company Check Pilot, air operator aeroplane type Chief Pilot or aeroplane type Training Pilot to certify the competency of the pilot to carry out pilot duties from the right seat, and
(amended 2000/12/01)

(iv) every 12 months, complete two segments in the right seat, one as the pilot-flying and one as the pilot-not-flying;
(amended 2000/12/01)

(b) The initial training specified in subparagraph 723.98(14)(a)(iii) shall include at least the following items:
(amended 2000/12/01)

(i) a normal take-off,

(ii) an instrument approach and landing, and

(iii) a take-off with an engine failure above V1 for FFS training or a simulated engine failure at a safe altitude for flight training;

(c) If the currency requirements specified in subparagraph 723.98(14)(a)(iv) lapse, the initial training specified in subparagraph 723.98(14)(a)(iii) shall be completed in order to regain right seat currency;
(amended 2000/12/01)

(d) A first officer, current on the aeroplane type, who is upgrading to captain on the same aircraft type will be considered to have completed the initial right seat training requirement specified in subparagraph 723.98(14)(a)(iii).
(amended 2000/12/01)

(15) Upgrade Training and Checking

(a) Upgrade training and checking for pilots who are qualified as a second-in-command on that aeroplane type shall include the following:

- (i) successfully complete training as a pilot-in-command in all areas of aeroplane handling and operation as outlined in the air operator's approved initial course;
- (ii) command and decision making;
- (iii) successfully complete specialized operations qualification training (e.g. lower take-off limits etc.); and
- (iv) successfully complete on that type of aeroplane the initial pilot proficiency check outlined in Schedule I or Schedule II, conducted by a Transport Canada inspector or an approved Company Check Pilot.

(b) Upgrade training and checking for pilots whose PPC as second-in-command on that aeroplane type has expired within the previous 24 months shall consist of completion of regaining qualifications requirements specified in paragraphs 723.98(12)(a) and (b) as well as the requirements of paragraph 723.98(15)(a).

(c) Pilots who have not held a valid PPC on that aeroplane type as second-in-command for a period greater than 24 months shall be given a complete initial aeroplane type training course as well as the requirements of paragraph (a) above.

(16) Flight Follower Training

An approved initial and annual recurrent training program is required for company personnel responsible for flight following of company aeroplanes. The training program shall consist of:

- (a) duties and responsibilities;
- (b) communication procedures;
- (c) applicable regulations and standards;
- (d) flight preparation procedures as applicable to assigned duties;
- (e) procedures in the event of an emergency or overdue aircraft;
- (f) accident and incident reporting procedures; and
- (g) requirements of approved *Company Operations Manual* as applicable to the duties and responsibilities.

(17) Aeroplane Surface Contamination Training

An approved surface contamination initial and recurrent training program is required for all operations personnel to ensure they are aware of the hazards and procedures for ice, frost and snow critical contamination on aircraft. The training program shall include:

- (a) responsibility of pilot-in-command and other operations personnel;
- (b) regulations related to operations in icing condition;
- (c) weather conducive to ice, frost and snow contamination;
- (d) inspection before flight and removal of contamination;
- (e) in-flight icing recognition; and
- (f) hazards related to critical surface contamination of ice, frost and snow.

(18) Minimum Equipment List Training (MEL)

When a Minimum Equipment List (MEL) has been approved for use on an aeroplane type the air operator shall provide the following training to flight crew members, maintenance personnel and to persons exercising operational control, as applicable:
(amended 2004/12/01)

- (a) training for maintenance personnel shall include instruction on those sections of the Maintenance Control Manual which address the MEL, placarding of inoperative equipment, maintenance release, and any other MEL related procedures;
(amended 2004/12/01)
- (b) training for flight crew members and operational control personnel shall include instruction on the purpose and use of an MEL, air operator MEL procedures, elementary work as applicable, and responsibility of the pilot-in-command;
(amended 2004/12/01)
- (c) recurrent training shall be conducted annually to ensure air operator personnel are aware of any changes to the MEL or MEL procedures.

(19) Transportation of Dangerous Goods

All training required by the Transportation of Dangerous Goods Regulations.

(20) Take-off Minima Reported Visibility RVR 1200 feet (1/4 mile)

Training is required for the pilot-in-command only, except, if the air operator authorizes in the *Company Operations Manual*, the second-in-command to conduct take-offs in lower than standard weather minima, the second-in-command shall undergo the same training as the pilot-in-command.

(a) Ground Training

- (i) take-off alternate requirements;
- (ii) pilot-in-command minimum experience;
- (iii) pilot-in-command responsibility for visibility and obstacle clearance requirements;
- (iv) minimum aeroplane and runway equipment requirements; and
- (v) procedures to ensure compliance with performance limitations.

(b) Synthetic Training Device Training RVR 1200-Aircraft without Certified Take-off Performance

During initial and annual recurrent training:

- (i) a minimum of one take-off at RVR 1200 feet with failure of the critical engine shortly after lift-off; and
- (ii) a minimum of one rejected take-off at RVR 1200 feet at a speed approaching rotation.

(21) Area Navigation Systems (RNAV)

(amended 1998/09/01)

(a) General Training

(i) To qualify for use of RNAV systems on IFR operations, an air operator shall have an approved flight crew training and qualifications program for use of the system. Flight crew shall have completed the appropriate training and have completed an in-flight check or an equivalent check in an approved synthetic training device. This qualification check shall be conducted by an approved check pilot.

(ii) Training shall be in the following areas:

- (A) pre-flight;
- (B) normal operation of the system;
- (C) procedures for manually updating system;
- (D) methods of monitoring and cross checking system;
- (E) operation in area of compass unreliability;
- (F) malfunction procedures;

(G) terminal procedures;

(H) waypoint symbology, plotting procedures, record keeping duties/practices;

(I) time keeping procedures; and

(amended 2003/03/01)

(J) post-flight.

(amended 2003/03/01)

(iii) To qualify for approval to conduct GPS approaches in IFR, an air operator shall have a flight crew training program approved by the Minister. Flight crew shall have completed the appropriate ground and flight training and have completed an in-flight check, or an equivalent check in a synthetic training device approved by the Minister prior to conducting GPS approaches. This qualification check shall be conducted by an approved check pilot.

(iv) Where pilots are required to use more than one type of GPS for approach, an air operator shall ensure the training program addresses the differences between the units, unless the units have been determined by the Minister to be sufficiently similar.

(v) An air operator shall ensure the ground training includes “hands on” training using a desk top simulator, a computer based simulation of the unit to be used, a static in-aircraft unit, or other ground training devices acceptable to the Minister.

(b) Ground Training - Non-Integrated Receivers (Panel Mount GPS Receivers)

An air operator shall ensure that the training program candidates are trained to proficiency in each of the elements associated with the following areas:

(i) Knowledge with the respect to the following:

(A) the GPS system, including:

(I) GPS system components and aircraft equipment;

(II) the composition of satellite constellation;

(III) the minimum number of satellites required for 2-D and 3-D navigation;

(IV) the basic concept of satellite ranging;

(V) factors affecting the accuracy of GPS signals;

(VI) the World Geodetic Survey 84 (WGS 84) datum and the effect of using any other datum;

(B) human factors applicable to the use of GPS and how errors may be reduced or eliminated;

- (C) company standard operating procedures for using GPS units; and
 - (D) procedures for reporting GPS problems and database errors.
- (ii) Ability to perform the following operational tasks:
- (A) select appropriate operational modes;
 - (B) recall categories of information contained in the database;
 - (C) predict RAIM availability;
 - (D) enter and verify user defined waypoints;
 - (E) recall and verify database waypoints;
 - (F) interpret typical GPS navigational displays including latitude/longitude, distance and bearing to waypoint, course deviation indication (CDI), desired track (DTK), track made good (TMG), actual track (TK), cross track error and any other information appropriate for the equipment used;
 - (G) intercept and maintain GPS defined tracks;
 - (H) determine navigation information appropriate for the conduct of the flight including ground speed (GS), estimated time of arrival (ETA) for next waypoint and destination;
 - (I) recognition of waypoint passage;
 - (J) use of 'direct to' function;
 - (K) link enroute portion of GPS flight plan to approach;
 - (L) conduct SIDs, STARs, terminal area procedures and holds;
 - (M) retrieve, verify and conduct GPS stand alone approaches; and
 - (N) conduct GPS missed approaches.
- (iii) Ability to conduct the following operational and serviceability checks:
- (A) database currency and area of operation;
 - (B) receiver serviceability;
 - (C) RAIM status;
 - (D) CDI sensitivity;
 - (E) position indication; and
 - (F) number of satellites acquired and, if available, satellite position information.

(iv) Ability to recognize and take appropriate action for all GPS warnings and messages including, where applicable:

- (A) “loss of RAIM”
- (B) “2D navigation”
- (C) “In Dead Reckoning Mode”
- (D) “database out of date”
- (E) “GPS fail”
- (F) “barometric input fail”
- (G) “power/battery low” or “fail”
- (H) “parallel offset on”; and
- (I) “satellite fail”.

(c) Ground Training - Integrated Receivers (Flight Management Systems)

An air operator shall ensure that the training program candidates are trained to proficiency in each of the elements associated with the following areas:

(i) Knowledge with the respect to the following:

(A) the GPS system and theory of operation, including:

- (I) GPS system components and aircraft equipment;
- (II) the composition of satellite constellation;
- (III) the minimum number of satellites required for 2-D and 3-D navigation;
- (IV) the basic concept of satellite ranging;
- (V) factors affecting the accuracy of GPS signals; and
- (VI) the WGS84 datum and the effect of using any other datum; and

(B) human factors applicable to the use of GPS and how errors may be reduced or eliminated (i.e. maintaining situational awareness); and

(ii) Ability to perform the following operational tasks:

- (A) predict RAIM availability;
- (B) link enroute portion of GPS flight plan to approach;
- (C) conduct GPS stand alone approaches; and
- (D) conduct GPS missed approaches.

(iii) Ability to conduct the following operational and serviceability checks:

- (A) RAIM status;
- (B) CDI sensitivity; and
- (C) number of satellites acquired and, if available, satellite position information.

(iv) Ability to recognize and take appropriate action for all GPS warnings and messages including, where applicable:

- (A) “loss of RAIM”;
- (B) “2D navigation”;
- (C) “GPS fail”;
- (D) “barometric input fail”; and
- (E) “satellite fail”.

(d) Flight Training

(i) Pilots shall complete flight training in the use of GPS for approach and other associated duties for each crew position they are authorized to occupy. Flight training may be completed in an aircraft, or in a level A or higher simulator that is equipped with the same model of GPS receiver (or a model determined by the Minister to be sufficiently similar) that is installed in the company aircraft.

(ii) Flight training shall be conducted by a designated training pilot who has completed the company ground training program approved by the Minister, and demonstrated proficiency in the use of the model of GPS (or a model determined by the Minister to be sufficiently similar) to an approved check pilot.

(amended 2006/06/30)

(iii) The following initial flight training and checking, and currency requirements apply to aircraft operated under Subpart 703 of the *Canadian Aviation Regulations* conducting single-pilot IFR GPS approaches where persons other than flight crew are carried.

(amended 2000/12/01)

Before a pilot is assigned as the pilot-in-command (PIC) of a single-pilot IFR operation using GPS for an instrument approach, the following requirements shall be met:

(A) within the preceding ninety days, and while under the direct supervision of a designated training pilot, the pilot shall conduct a minimum of ten (10) GPS approaches of which:

- (I) five (5) approaches are conducted in actual or simulated instrument meteorological conditions (IMC) to the prescribed landing minima,

- (II) three (3) approaches including a published missed approach, at least two of which are conducted in actual or simulated IMC, and
 - (III) two (2) approaches are conducted using different initial approach waypoints (IAWPs);
- (B) completion of all of the requirements listed in clause (A) shall be recorded in the pilot's training file together with the following information:
- (I) registration and type of aircraft, or type of simulator, used for the GPS approaches;
 - (II) manufacturer and model number of GPS equipment used;
 - (III) date, name and number of approaches conducted in total, in IMC, with missed approaches and from which IAWP; and
 - (IV) certification by the designated training pilot attesting to the training given to the pilot;
- (C) the pilot shall successfully demonstrate his/her proficiency in GPS operations as part of a PPC or as a separate check ride conducted by an approved company check pilot or a Transport Canada Inspector and shall be certified as proficient; and
- (D) currency requirements shall be met by conducting GPS instrument approaches during the PPC.

(22) Transportability of Pilot Proficiency Check or Competency Check

Transportability of Pilot Proficiency Checks or Competency Checks from one air operator to another is permitted subject to the hiring air operator providing the following training which shall be specified in the approved operations/training manual:

- (a) company indoctrination;
- (b) pilot ground and emergency procedures training on each type of aeroplane the pilot is assigned, sufficient to cover the air operator procedures and equipment differences;
- (c) standard operating procedures review; and
- (d) the hiring air operator records the PPC/PCC validity and expiration date in company records.

(23) High Altitude Training

High Altitude training is required for all flight crew members operating aeroplanes above 13,000 feet ASL before the first assignment on a pressurized aeroplane and every three years thereafter:

- (a) physiological phenomena in a low pressure environment, including:
 - (i) respiration;
 - (ii) hypoxia;
 - (iii) duration of consciousness at altitude without supplemental oxygen; and
 - (iv) gas expansion and gas bubble formation.
- (b) other factors associated with rapid loss of pressurization including:
 - (i) most likely causes;
 - (ii) noise;
 - (iii) cabin temperature change;
 - (iv) cabin fogging;
 - (v) effects on objects located near the point of fuselage failure; and
 - (vi) actions of crew members immediately following the event and the likely resultant attitude.

(24) Single-engine Aeroplanes Carrying Passengers VFR at Night or Under IFR

The following training is required:

Pilot in Command

(amended 2006/06/30)

- (a) initial training in an approved synthetic training device, including all emergency procedures that cannot be safely practiced in the aeroplane;
- (b) training in the aeroplane in accordance with the following training requirements:

Training Requirements

(amended 2006/06/30)

Training Requirements

INITIAL			RECURRENT		
Ground	Aeroplane	Simulator	Ground	Aeroplane	Simulator
20.0	2.0	6.0	7.5	1.0	N/R

1. Ground training times do not include self-study or examination times.
2. Written exams are mandatory at completion of both Initial and Recurrent Ground Training.
3. Synthetic training device and Aeroplane times are Pilot Flying (PF) times only.

(c) Required Synthetic Training Device Exercises

- (i) use of checklists
 - (ii) aeroplane fire on ground or while airborne
 - (iii) engine fire on ground and in flight
 - (iv) engine failure in flight
 - (v) inadvertent encounter with airframe icing conditions and operation of de-icing and anti-icing equipment
 - (vi) hydraulic, electrical, and other system malfunctions (as applicable)
 - (vii) loss of pressurization and emergency descent, (if applicable)
 - (viii) recognition and recovery from turbulence and windshear on approach and landing
 - (ix) rejected take-offs and landings
 - (x) missed approach and go-around
 - (xi) straight-in and circling approaches, with emphasis on non-precision procedures
 - (xii) Standard Operating Procedures (SOP) containing crew coordination as applicable to the operation, in accordance with paragraph 723.107(1)(f).
- (amended 2006/06/30)

The following training is required:
(amended 2006/06/30)

Second in Command

(amended 2006/06/30)

- (a) training in the aeroplane in accordance with the following training requirements:
(amended 2006/06/30)

Training Requirements (amended 2006/06/30)

INITIAL			RECURRENT		
Ground	Aeroplane	Simulator	Ground	Aeroplane	Simulator
20.0	2.0	N/R	7.5	1.0	N/R

1. Ground training times do not include self-study or examination times.
2. Written exams are mandatory at completion of both Initial and Recurrent Ground Training.

(25) Survival Equipment Training

Training for all crew members shall include the following:

- (a) survival concepts;
- (b) contents of survival equipment kit; and
- (c) how to use the survival equipment carried on board as appropriate for the operation.

(26) Aeroplane Servicing and Ground Handling Training for Pilots

(a) fuelling procedures:

- (i) types of fuel, oil and fluids used in the aeroplane;
- (ii) correct fuelling procedures; and
- (iii) procedures for checking fuel, oil and fluids and proper securing of caps.

(b) use of tow bars and maximum nose wheel deflection when towing;

(c) seasonal use of the parking brake;

(d) installation of protective covers on the aeroplane; and

(e) procedures for operating in cold weather such as:

- (i) moving the aeroplane out of a warm hangar when precipitation is present;
- (ii) procedures for applying de-icing and anti-icing fluids for the aeroplane type including critical flight controls post application inspections; and
- (iii) engine and cabin pre-heating procedures, including proper use of related equipment

(27) Training Program - Minimum Flight Training Times (Aeroplanes)

(amended 1998/06/01)

(a) In Tables I and II,

- (i) the term “flight training time” means “flight time”;
- (ii) the terms “Level A”, “Level B” and “Level C” refer to the approved training program, not to the certification level of the simulator used.

(b) Pilots flying in a two crew environment must receive PNF flight training in the simulator or aircraft in addition to the PF times required in tables I and II.

(amended 2006/06/30)

TABLE I

Minimum Initial Flight Training Time	Ground Training			Flight Training Simulator and Aircraft (PF - Pilot Flying)					Aircraft Only
	Basic	Pressurized	Turbine	Level A ¹	Level B ¹	Level C	Level D (amended 2003/06/01)	A/C ²	
Single-Engine	5.5	.5	.5						3.0
S-E (Turbine) IFR/Cargo	16.0								3.0
S-E (Turbine) IFR/PAX	20.0			6.0				2.0	
Multi-Engine 6* or Less	7.5	4.0	4.0						3.0
Multi-Engine 7* to 9*	12.0	4.0	4.0	7.5	7.5	10.0		1.5	4.0
M/Engine 10* to 19* ++	16.0	4.0	4.0	8.0	8.0	10.0	10.0 (amended 2003/06/01)	2.0	5.0
M/E Piston 20+* ++	18.0	2.0 (amended 2003/06/01)							6.0
M/E Turbine 20+* ++	45.0			10.0	10.0	12.0	12.0 (amended 2003/06/01)	2.0	8.0

* Denotes the number of passenger seats for which the aircraft was certificated.

++ Included since operators may choose to operate under 703 configured for nine or fewer seats. (e.g., Twin Otter)

¹ Training on Aircraft required

² Minimum aircraft training required
(amended 2003/06/01)

TABLE II

Minimum Recurrent Flight Training Time (Annual)	Ground Training			Flight Training Simulator and Aircraft (PF - Pilot Flying)					Aircraft Only
	Basic	Pressurized	Turbine	Level A	Level B	Level C	Level D (amended 2003/06/01)	A/C ¹	
Single-Engine	2.5	.5	.5						1.0
S-E (Turbine) IFR/Cargo	7.5								1.0
S-E (Turbine) IFR/PAX	7.5								1.0
Multi-Engine 6* or Less	5.0 (amended 2003/06/01)	.5 (amended 2003/06/01)	.5 (amended 2003/06/01)						1.5
Multi-Engine 7* to 9*	5.0	.5 (amended 2003/06/01)	.5 (amended 2003/06/01)	4.0	4.0	4.0		1.0	1.5
M/Engine 10* to 19* ++	7.0	.5 (amended 2003/06/01)	.5 (amended 2003/06/01)	4.0	4.0	4.0	4.0 (amended 2003/06/01)	1.0	2.0
M/E Piston 20+* ++	7.5	(amended 2003/06/01)							3.0
M/E Turbine 20+* ++	20+ (amended 2003/06/01)			4.0	4.0	4.0	4.0 (amended 2003/06/01)	1.0	3.0

* Denotes the number of passenger seats for which the aircraft was certificated.

++ Included since operators may choose to operate under 703 configured for nine or fewer seats. (e.g., Twin Otter)

¹ Amount of additional training required on aircraft if operator does not have an approved Level A or higher training program authorizing recurrent training on a full flight simulator. (amended 2003/06/01)

(28) Airborne Icing Training

(amended 1998/06/01)

Approved initial and recurrent training programs for all flight crew shall include airborne icing training to ensure a full awareness of the hazards caused by airborne icing conditions and the operating procedures necessary to avoid and exit hazardous icing conditions. The training program shall include:

- (a) the basis for aeroplane certification for flight into known icing conditions;
- (b) airborne icing definitions and terminology;
- (c) aerodynamic effects of airborne icing;
- (d) airborne icing weather patterns, including both classical and non-classical mechanisms for freezing precipitation;
- (e) flight planning and in flight icing information;

(f) information specific to aircraft fleet concerning operation de- and anti-ice equipment, and operational procedures; and

(g) company directives concerning operations in airborne icing contained in COMs, SOPs, and other company documents.

(29) Controlled Flight into Terrain (CFIT) Avoidance Training

(amended 2000/06/01)

Subject to paragraph (d), air operators who hold AOCs authorizing operations under IFR or NVFR shall provide the following CFIT avoidance training to all flight crew members operating aircraft under IFR or NVFR:

(a) initial and biennial ground training:

(i) factors that may lead to CFIT accidents and incidents,

(ii) operational characteristics, capabilities, and limitations of GPWS (if applicable),

(iii) CFIT prevention strategies,

(iv) methods of improving situational awareness, and

(v) escape manoeuvre techniques and profiles applicable to the aeroplane type;

(b) air operators with GPWS equipment using synthetic training devices in their approved initial training program shall conduct CFIT avoidance training as follows:

(i) one escape manoeuvre performed in VMC in response to a GPWS warning, and

(ii) one escape manoeuvre performed in IMC in response to a GPWS warning;

(c) air operators with GPWS equipment using synthetic training devices in their approved recurrent training program shall conduct CFIT avoidance training biennially as follows:

(i) one escape manoeuvre performed in VMC in response to a GPWS warning where the air operator is approved for VFR only operations, or

(ii) one escape manoeuvre performed in IMC in response to a GPWS warning where the air operator is approved for IFR operations;

(d) where the flight crew members operate aircraft equipped with a Terrain Awareness and Warning System (TAWS), the training provided on TAWS is considered to have met the requirements of paragraphs (a), (b) and (c).

(30) Pacific RNP-10 Training

(amended 2002/12/01)

For a flight crew member to qualify for operations in Pacific RNP-10 airspace, an air operator shall have initial and recurrent approved training programs that ensure that each flight crew member is proficient in the following areas:

(a) flight planning for RNP-10 airspace;

- (b) navigation performance requirements for RNP-10 airspace;
- (c) en route procedures for RNP-10 airspace; and
- (d) contingency procedures for RNP-10 airspace.

(31) Reduced Vertical Separation Minima (RVSM) Training
(amended 2002/12/01)

For a flight crew member to qualify for operations in RVSM airspace, an air operator shall have initial and recurrent approved training programs that ensure that each flight crew member is proficient in the following areas:

- (a) knowledge of the floor, ceiling and horizontal boundaries of the RVSM airspace to be operated in;
- (b) rules on exclusion of non-RVSM compliant aircraft;
- (c) pilot procedures with respect to:
 - (i) pre-flight and in-flight altimeter checks,
 - (ii) use of the automatic altitude control system,
 - (iii) Minimum Equipment List (MEL) items applicable to RVSM operations,
 - (iv) special procedures for in-flight contingencies,
 - (v) weather deviation procedures,
 - (vi) track offset procedures for wake turbulence and inconsequential collision avoidance systems alerts, and
 - (vii) pilot level-off call;
- (d) procedures for flight of non-RVSM compliant aircraft for maintenance, humanitarian or delivery flights; and
- (e) use of ACAS/TCAS.

(32) Stabilized Constant-Descent-Angle (SCDA) Non-Precision Approach Training
(amended 2006/12/01)

The air operator shall ensure that the pilot-in-command and the second-in-command, in order to conduct a stabilized constant-descent-angle (SCDA) non-precision approach, receive ground and simulator or flight training that addresses the following subjects within their initial and recurrent training programs:

- (a) factors that affect altitude loss during the initiation of a missed approach;
- (b) the relationship between the published missed approach point (MAP) and the position where a missed approach is commenced following a stabilized final approach descent to minimum descent altitude (MDA);

Information Note: *The missed approach climb from a stabilized final approach descent will normally occur some distance before reaching the published MAP.*

(c) the requirement to initiate a missed approach if the required visual reference necessary to continue to land has not been established, at the latest on reaching the earlier of:

(i) the minimum descent altitude, and

(ii) the MAP;

(d) the requirement to commence the horizontal (lateral) navigation portion of the published missed approach procedure at the MAP;

Information Note: *It may be essential for obstacle clearance to delay any turns stated in the published missed approach procedure until the aircraft crosses the MAP.*

(e) the requirement to ensure that any altitudes at step-down fixes between the final approach fix (FAF) and the MAP are respected;

(f) the operation of any aircraft computer-generated approach slope systems or other methods of computing stable approach paths to the target touchdown point;

Information Note: *The effects of horizontal position error and temperature on the vertical path, whether it is derived from an inertial, barometric vertical navigation (Baro VNAV), or altimeter reference, shall be addressed.*

(g) the requirement to verify any altitude and waypoint information from a navigation database against an independent source;

(h) crew coordination upon reaching MDA and during the execution of a missed approach; and

(i) utilization of temperature corrections to MDA and other published altitudes and remote altimeter correction factors, when required.

DIVISION IX - MANUALS

723.105 Contents of Company Operations Manual

The *Company Operations Manual* shall contain at least the following, as applicable to the operation:

(1) For air operators utilizing multi-engined aeroplanes or single-engined aeroplanes operating under IFR or VFR at night

(a) preamble relating to use and authority of manual;

(b) a table of contents;

(c) amending procedures, amendment record sheet, distribution list and list of effective pages;

- (d) a copy of the Air Operator's Certificate and operations specifications;
- (e) a chart of the management organization;
- (f) the duties, responsibilities and succession of command of management and operations personnel;
- (g) description of operational control system including:
 - (i) flight authorization and flight preparation procedures;
 - (ii) preparation of operational flight plan and other flight documents;
 - (iii) procedures to ensure the flight crew are advised, prior to dispatch, of any aeroplane defects that have been deferred, (by Minimum Equipment List or any other means);
 - (iv) flight watch, flight following and communication requirements;
 - (v) dissemination procedures for operational information and acknowledgement;
 - (vi) fuel and oil requirements;
 - (vii) weight and balance system;
 - (viii) accident/incident reporting procedures and procedures for reporting overdue aircraft;
 - (ix) use of checklists;
 - (x) maintenance discrepancy reporting and requirements of completion of flight, and
 - (xi) retention period of operational flight plans;
- (h) sample of operational flight plan, weight and balance form and retention period;
- (i) FDR and CVR procedures, (if applicable);
- (j) operating weather minima and applicable requirements for IFR, VFR, VFR at night, VFR over-the-top including alternate aerodrome requirements;
- (k) instrument and equipment requirements;
- (l) instrument approach procedures (including company approaches), and alternate aerodrome requirements;
- (m) procedures for establishing company routes in uncontrolled airspace;
- (n) procedures pertaining to enroute operation of navigation and communication equipment (including collision avoidance procedures);
- (o) operations in hazardous conditions such as icing, thunderstorms, white out, windshear;
- (p) aeroplane performance limitations;
- (q) securing of cargo;

- (r) passenger briefing procedures;
- (s) use of aircraft flight manual, aircraft operating manual, standard operating procedures and minimum equipment lists (as applicable);
- (t) aeroplane ice, frost and snow critical surface contamination procedures;
- (u) procedures for carriage of dangerous goods;
- (v) fuelling procedures including:
 - (i) fuel contamination precautions;
 - (ii) bonding requirements;
 - (iii) fuelling with engine running (not permitted with passengers on board, see Section 602.09 of the *Canadian Aviation Regulations*); and
 - (iv) fuelling with passengers on board;
- (w) list of emergency survival equipment carried on the aeroplane and how to use equipment;
- (x) emergency procedures for:
 - (i) emergency locator transmitter;
 - (ii) passenger preparation for emergency landing/ditching;
 - (iii) emergency evacuation;
 - (iv) ground emergency coordination procedures; and
 - (v) unlawful interference;
- (y) minimum flight crew members required and flight crew member qualifications;
- (z) flight duty time limitations and rest requirements;
- (a-a) training programs including copy of company training and qualification record form(s);
- (b-b) use of oxygen;
- (c-c) carriage of external loads;
- (d-d) operational support services and equipment;
- (e-e) passenger and cabin safety procedures for emplaning and deplaning passengers when engines are running; and
(amend 1998/06/01)
- (f-f) Float operators shall include procedures unique to their environment;
(amended 1998/06/01)

- (g-g)* inspection details and frequency of inspection of emergency equipment carried on board the aeroplanes;
- (h-h)* policy regarding GPWS and TCAS, (if applicable);
- (i-i)* policy on occupation of observer seat, (if applicable);
- (j-j)* requirement for preparing runway analysis charts;
- (k-k)* procedures for reduced VFR limits in uncontrolled airspace (if applicable);
- (l-l)* copies of all forms utilized including sufficient instruction on form completion;
- (m-m)* for dedicated or contracted MEDEVAC operations, operational procedures. These shall include procedures which will ensure, to the maximum extent possible, that decisions affecting safety of flight are not influenced by the condition of the patient, and
(amended 2003/06/01)
- (n-n)* other information related to safety.
(amended 2003/06/01)

(2) For an air operator utilizing single-engined aeroplanes under day VFR

- (a)* preamble relating to use and authority of manual;
- (b)* a table of contents;
- (c)* amending procedures, amendment record sheet, distribution list and list of effective pages;
- (d)* a copy of the Air Operator's Certificate and operations specifications;
- (e)* a chart of the management organization;
- (f)* the duties, responsibilities and succession of command of management and operations personnel;
- (g)* description of operational control system including:
 - (i)* flight authorization and flight preparation procedures;
 - (ii)* operational flight plans and retention period;
 - (iii)* flight watch and communication requirements;
 - (iv)* flight following requirements;
 - (v)* dissemination procedures for operational information and acknowledgement;
 - (vi)* fuel and oil requirements;
 - (vii)* weight and balance system;
 - (viii)* preparation and retention of operational flight plan and other flight documents;

- (ix) accident/incident reporting procedures and procedures for reporting overdue aircraft;
- (x) use of checklists; and
- (xi) maintenance discrepancy reporting and requirements of completion of flight;
- (h) operating weather minima and applicable requirements for VFR and VFR over-the-top;
- (i) operations in hazardous conditions such as icing, thunderstorms, white out, windshear;
- (j) aeroplane performance limitations;
- (k) securing of cargo;
- (l) passenger briefing procedures;
- (m) use of aircraft flight manual, aircraft operating manual, standard operating procedures and minimum equipment lists (as applicable);
- (n) aeroplane ice, frost and snow critical surface contamination procedures;
- (o) procedures for carriage of dangerous goods;
- (p) fuelling procedures including:
 - (i) fuel contamination precautions;
 - (ii) bonding requirements;
 - (iii) fuelling with engine running (not permitted with passengers on board, see Section 602.09 of the *Canadian Aviation Regulations*); and
 - (iv) fuelling with passengers on board;
- (q) list of emergency survival equipment carried on the aeroplane, how to use equipment and periodic inspection requirements;
- (r) emergency procedures for:
 - (i) emergency locator transmitter;
 - (ii) passenger preparation for emergency landing/ditching;
 - (iii) emergency evacuation;
 - (iv) ground emergency coordination procedures; and
 - (v) unlawful interference;
- (s) minimum flight crew members required and flight crew member qualifications;
- (t) flight duty time limitations and rest requirements;
- (u) training programs including copy of company training and qualification record form(s);
- (v) carriage of external loads;

(w) operational support services and equipment;

(x) passenger and cabin safety procedures for emplaning and deplaning passengers when engines are running; and

(amended 1998/06/01)

(y) float operators shall include procedures unique to their environment;

(amended 1998/06/01)

(z) procedures for reduced VFR limits in uncontrolled airspace; (if applicable); and

(a-a) other information related to safety.

(3) For an owner/pilot operating aeroplanes day VFR and not employing other pilots

(a) table of contents;

(b) amendment procedures;

(c) list of effective pages;

(d) copy of air operator certificate and operations specifications;

(e) weight and balance system;

(f) list of emergency survival equipment carried on board the aeroplane;

(g) training program including copy of company training and qualification record form;

(h) procedures for reporting overdue aeroplanes;

(i) procedures for reduced VFR limits in uncontrolled airspace (if applicable);

(j) accident incident reporting;

(k) procedures for carriage of dangerous goods;

(l) passenger and cabin safety procedures for emplaning and deplaning passengers when engines are running; and

(amended 1998/06/01)

(m) float operators shall include passenger and cabin safety procedures unique to their environment.

(amended 1998/06/01)

723.107 Aircraft Standard Operating Procedures (SOP)

The Aircraft Standard Operating Procedures shall contain the following information for each type of two pilot aeroplane operated. Where there are significant differences in equipment and procedures between aeroplanes of the same type operated the Standard Operating Procedures Manuals shall show the registration mark of the aeroplane it is applicable to.

Required information, if contained in another publication carried on board the aeroplane during flight, need not be repeated in the SOP.

The SOP may form part of the *Company Operations Manual*.

The SOP shall contain the following as applicable to the operation:

(1) General

- (a) table of contents;
- (b) list of effective pages;
- (c) amending procedure;
- (d) preamble;
- (e) communications;
- (f) crew coordination;
- (g) use of check lists;
- (h) standard briefings; and
- (i) standard calls.

(2) Normal Procedures

- (a) weight and balance control requirements;
- (b) ramp/gate procedures;
- (c) battery/APU engine starts;
- (d) taxi;
- (e) take-off and climb;
- (f) cruise;
- (g) descent;
- (h) approaches IFR, visual, VFR, and circling;
- (i) landing;
- (j) missed approach and balked landing procedures;
- (k) stall recovery;
- (l) refuelling with passengers on board;
- (m) use of on board navigation and alerting aids; and
- (n) check lists.

(3) Abnormal and Emergency Procedures:

- (a)* emergency landing/ditching - with time to prepare and without time to prepare;
- (b)* pilot incapacitation two communication rule, (2 pilot crew);
- (c)* bomb threat and hijacking;
- (d)* engine fire/failure/shutdown;
- (e)* propeller over speed, (as applicable);
- (f)* fire, internal/external;
- (g)* smoke removal;
- (h)* rapid decompression, (as applicable);
- (i)* flapless approach and landing, (as applicable);
- (j)* rejected take-off;
- (k)* inadvertent encounter with moderate to severe in flight icing; and
(amended 1998/06/01)
- (l)* other abnormal and emergency procedures that are specific to the type of aeroplane.
(amended 1998/06/01)

(4) Diagrams

- (a)* normal take-off;
- (b)* engine out take-off;
- (c)* precision approach, all engines operating;
- (d)* precision approach, engine out;
- (e)* non-precision approach, all engines operating;
- (f)* non-precision approach, engine out;
- (g)* go-around, all engines operating;
- (h)* go-around, engine out;
- (i)* VFR circuits;
- (j)* partial flaps/slats approach; and
- (k)* flapless approach.



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CANADIAN AVIATION REGULATIONS

PART VII - COMMERCIAL AIR SERVICES

STANDARD 723 - AIR TAXI - HELICOPTERS

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NOTE

All amendments to the CARs will be indicated by the Coming into Force date, immediately following the amended text.

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STANDARD 723 - AIR TAXI - HELICOPTERS

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Foreword

This Commercial Air Service Standard outlines the requirements for complying with Subpart 703 of the *Canadian Aviation Regulations*.

For ease of cross reference, the divisions and numbers of the standard are assigned to correspond to the regulations, therefore, Standard 723.05 would reflect a standard required by Section 703.05 of the Regulations.

PART VII - COMMERCIAL AIR SERVICES

STANDARD 723 - AIR TAXI - HELICOPTERS

DIVISION I - GENERAL

723.01 *Application*

(1) The standards under this Subpart apply to every Canadian air operator engaged in commercial air services under Subpart 703 of the *Canadian Aviation Regulations*.

(2) The words and expressions used in these Standards have the same meaning as in the General Provisions, Part I of the *Canadian Aviation Regulations*, with the following additions:

Definitions

“deplane” - means disembark. A helicopter is deplaned when passengers leave the helicopter (or disembark) in the normal manner. (*débarquement*)

“evacuate” - means the egress from a helicopter in an emergency situation using all available exits and assist means. (*évacuation*)

“fuelling” - means the act of transferring fuel into or out of a helicopter’s fuel tanks from or to an external supply. (*avitaillement en carburant*)

“NDB/ARA” - means Non-directional Beacon/Airborne Radar Approach; (*radiophare non directionnel/approche radar de bord ou NDB/ARA*)
(amended 2000/12/01)

“operations co-ordination” - means the exercise of authority by an air operator over its operating activities, excluding operational control. (*coordination des opérations*)

“take-off safety speed” - means a referenced airspeed obtained after lift-off at which the required one-engine inoperative climb performance can be achieved. (*vitesse de sécurité au décollage*)

“wide-body helicopter” - means a helicopter having an interior cabin width of 2 metres (6 feet, 7 inches) or more. (*hélicoptère gros porteur*)

DIVISION II - CERTIFICATION

723.07 Issuance or Amendment of Air Operator Certificate

(1) The following constitutes an application for an Air Operator Certificate:

- (a) Form 26-0045 Airport - information required to determine the suitability of the base of operations and sub-bases. The applicant shall be able to demonstrate that operations are permitted at each base which will normally be done by providing written permission from the Local Airport Authority. Access to the aerodrome may also be demonstrated by other means such as facilities provided at a certified heliport through a lease or contractual agreement or by ownership of a certified heliport;
- (b) Form 26-0046 Aircraft - information with respect to each helicopter by registration;
- (c) Form 26-0047 Personnel - information on required personnel. These shall be supported by resumes and statements of qualification for each required position;
- (d) Form 26-0048 Maintenance Facilities;
- (e) Maintenance Control Procedures;
- (f) *Company Operations Manual*;
- (g) Minimum Equipment List(s) (if applicable);
- (h) nomination for Company Check Pilot (if applicable); and
- (i) Form 26-0448 Cabin Safety (as applicable).

(2) Qualifications and Responsibilities of Operations Personnel

(a) Operations Manager

(i) Qualifications

- (A) Except where the air operator certificate authorizes single-engine, day-only operations, has acquired not less than 2 years' related experience with an air operator of a Commercial Air Service whose flight operations are similar in size and scope;
 - (B) demonstrates knowledge to the Minister with respect to the content of the operations manual, the Air Operator Certificate and operations specifications, the provisions of the regulations and the standards necessary to carry out the duties and responsibilities to ensure safety; and
 - (C) has attended a Company Aviation Safety Officer (CASO) course or attends such a course within 12 months of assuming the position of Operations Manager.
- (amended 2000/12/01)

(ii) Responsibilities

The operations manager is responsible for safe flight operations. In particular, the responsibilities of the position include:

- (A) control of operations and operational standards of all helicopters operated;
- (B) the identification of operations coordination functions which impact on operational control (eg. maintenance, crew scheduling, load control, equipment scheduling);
- (C) supervision, organization, manning and efficiency of the following:
 - (I) cabin safety;
 - (II) crew scheduling and rostering;
 - (III) training program; and
 - (IV) flight safety;
- (D) the contents of the air operator's *Company Operations Manual*;
- (E) the supervision of and the production and amendment of the *Company Operations Manual*;
- (F) liaison with the regulatory authority on all matters concerning flight operations including any variation to the Air Operator Certificate;
- (G) liaison with any external agencies which may effect air operator operations;
- (H) ensuring that the air operator's operations are conducted in accordance with current regulations, standards and air operator policy;
- (I) ensuring that crew scheduling complies with flight and duty time regulations;
- (J) ensuring that all crew members are kept informed of any changes to the regulations and standards;
- (K) the receipt and actioning of any aeronautical information affecting the safety of flight;
- (L) the dissemination of helicopter safety information, both internal and external;
- (M) qualifications of flight crew; and
- (N) maintenance of current operations library.

NOTE:

In the operations manager's absence, all responsibilities for operational duties shall be delegated to another individual qualified in accordance with the Canadian Aviation Regulations, except that the knowledge requirements may be demonstrated to the air operator rather than the Minister.

(b) Chief Pilot**(i) Qualifications**

The chief pilot shall have the following qualifications:
(amended 2003/06/01)

(A) If the air operator certificate authorizes:

(I) day VFR only - holds a Commercial Pilot Licence (Helicopter);

(II) day and night VFR - holds a Commercial Pilot Licence (Helicopter) and a valid helicopter instrument rating; or

(III) IFR - holds an Airline Transport Pilot Licence (Helicopter) and a valid helicopter instrument rating; or a valid Commercial Pilot Licence (Helicopter) and a valid helicopter instrument rating;

(B) have at least 500 hours of flying time as a helicopter pilot-in-command, of which 250 hours shall have been acquired within the preceding three years;
(amended 2002/06/01)

(C) be qualified in accordance with the air operator's training program to act as pilot-in-command on one of the types to be operated;

(D) demonstrate knowledge to the Minister with respect to the content of the Company Operations and Training Manuals and, if applicable, the *Company Check Pilot Manual*, the provisions of the regulations and standards and flight operating procedures necessary to carry out the duties and responsibilities to ensure safety; and

(E) the chief pilot's personal record in relation to aviation shall not include:
(amended 2003/06/01)

(I) any conviction under subsection 7.3(1) of the *Aeronautics Act*; or

(II) two or more convictions, occurring during separate unrelated events, under the *Canadian Aviation Regulations*.

NOTE:

A chief pilot qualified under Subpart 704 of the Canadian Aviation Regulations may serve as the chief pilot for Subpart 703 of the Canadian Aviation Regulations operations within the same company.

(ii) Responsibilities

The chief pilot is responsible for the professional standards of the flight crews and, in particular:

- (A) developing standard operating procedures;
- (B) implementing all required approved training programs for the air operator flight crews;
- (C) issuing directives and notices to the flight crews as required;
- (D) the actioning and distribution of accident, incident, and other occurrence reports;
- (E) the processing and actioning of any crew reports;
- (F) the supervision of flight crew;
- (G) assuming any responsibilities delegated by the Operations Manager; and
- (H) in his or her absence, all responsibilities for duties shall be delegated to a person with equivalent qualifications except that the knowledge requirements may be demonstrated to the air operator rather than to the Minister.

(c) Person Responsible for Maintenance

The person responsible for the maintenance control system shall be qualified in accordance with Section 726.03 of the *Commercial Air Service Standards*.

(d) Operational Support Services and Equipment

The requirement for operational support services and equipment will be dependent on type of helicopters, the size and scope of the operations and shall include the following, as applicable:

- (i) operational control system requirements;
- (ii) flight operations publications including a copy of the *Aeronautics Act*, applicable *Canadian Aviation Regulations*, *Company Operations Manual*, *Maintenance Control Manual*, *Maintenance Procedures Manual* (if applicable), *Canada Flight Supplement*, *Water Aerodrome Supplement* (if applicable), *Airplane Flight Manuals*, *Aircraft Operating Manuals* (if applicable), *Standard Operating Procedures* (if applicable), *Aeronautical Information Publication*, *Minimum Equipment Lists* (if applicable) and appropriate maps and charts;
- (iii) passenger and cargo handling requirements;
- (iv) weather availability requirements;
- (v) communications requirements;
- (vi) procedures for handling dangerous goods;

- (vii) ground de-icing/anti-icing program requirements; and
- (viii) helicopter servicing facilities and ground handling equipment.

723.08 Contents of Air Operator Certificate

The following are the standards for operations specifications which may be issued pursuant to this section:

(1) Special Helicopter Procedures (refers to subparagraph 703.08(g)(vii) of the *Canadian Aviation Regulations*)
(amended 2003/03/01)

(a) The standard for authorization to use the NDB/ARA Offshore Instrument Approach Procedure is:

(i) the helicopter is certificated as a Transport Category A helicopter and operated by a pilot-in-command and a second-in-command two pilot flight crew;

(ii) the helicopter shall be equipped with:

(A) weather radar incorporating a beacon receiver mode and one ADF;

(B) two independent VHF air ground communication systems;

(C) two radio altimeter indicators with altitude alert function; and

(D) rain protection for each windshield and a heat source for each airspeed system pitot tube;

(iii) the aerodrome shall be equipped with:

(A) ground/air communications equipment capable of providing essential approach and landing information;

(B) facilities to provide essential information related to altimeter setting, observed weather, wind speed and direction, aerodrome condition and, if applicable, pitch and roll of the deck; and

(C) at least one non-directional beacon (NDB);

(iv) flight crew member qualifications;

(A) before pilots may conduct approaches to a minimum descent altitude to 150 feet they shall have demonstrated, within the proceeding 12 months, to a Transport Canada Inspector or a Company Check Pilot their proficiency conducting NDB/ARA approaches to 150 feet MDA. The check may be conducted in an approved synthetic flight training device provided the air operator is approved to use the FTD for pilot training. NDB/ARA certification shall be annotated on the Pilot Check Report; and

(B) pilots-in-command having less than 100 hours pilot-in-command experience on the helicopter type or not currently holding NDB/ARA certification are restricted to NDB/ARA 250 feet MDA;

(v) approach beyond the Final Approach Fix when visibility is reported at less than 1/4 statute mile is prohibited.

(b) Category I ILS - 100 feet DH

The standards for authorization to use ILS approach minima to 100 feet DH and reported RVR of not less than 1,200 feet on a Category I Instrument Landing System (ILS) are:

- (i) the helicopter is certificated as Transport Category A rotorcraft, and operated by a pilot-in-command and second-in-command, two-pilot flight crew;
- (ii) the approach is a Category I ILS procedure as published in the *Canada Air Pilot* including medium or high intensity approach lighting and a transmissometer at either the approach and/or mid point of the runway;
- (iii) both the pilot-in-command (PIC) and the second-in-command (SIC) have at least 100 hours on type of rotorcraft flown;
- (iv) the air operator has developed an acceptable program and has received authorization to conduct training and checks in an approved synthetic flight training device (FTD);
- (v) the PIC and the SIC shall be checked within the previous 12 months in an approved FTD by an approved check pilot or a Transport Canada Inspector and shall be certified as competent to use these minima;
- (vi) the helicopter shall be established in a stabilized approach and shall be flown at an indicated airspeed not exceeding 80 knots from the final approach fix (FAF) inbound;
- (vii) the helicopter shall be equipped with the following serviceable and functioning systems:
 - (A) a flight director or single automatic approach coupler augmenting the stabilization system;
 - (B) two radio altimeter indicators having an altitude alert function which do not interfere with the normal operation and display of the radio altimeter system;
 - (C) ice and rain protection for each windshield and a heat source for each airspeed system pitot tube installed;
 - (D) two independent VHF air-ground communications systems; and
 - (E) dual ILS localizer and glide slope receivers and associated avionics failure warning systems;
- (viii) the air operator shall provide training to flight crew members in accordance with the section 723.98;

(ix) for the purposes of crew certification, a successful approach is defined as one in which, at the DH:

- (A) the helicopter is in trim for continuation of a normal approach and landing;
- (B) the indicated airspeed, heading and threshold height are satisfactory for a normal transition to an in-ground effect hover or run-on landing without an abnormally large flare such as would cause a gain in altitude and/or a loss of required visual reference;
- (C) the aircraft is positioned and tracking to remain within the lateral confines of the runway extended;
- (D) deviation from the glide path does not exceed one dot, as displayed on the ILS indicator; and
- (E) no unusual roughness or excessive attitude changes have occurred after leaving the final approach fix (FAF);

(x) for the purposes of crew certification:

- (A) the proficiency check (initial and recurrent) will be conducted by an approved company check pilot or by a Transport Canada Inspector. The company check pilot must receive lower limits training and be monitored initially in the FTD by a Transport Canada Inspector, prior to conducting lower limits checks on company personnel;
- (B) the crew will consist of a pilot-in-command and a second-in-command and the company check pilot or the Transport Canada Inspector will not form part of the crew;
- (C) the proficiency check (initial and recurrent) for each flight crew member shall include at least one RVR 1200 feet/DH 100 feet approach to a missed approach during which a practical emergency (e.g. engine fire) is introduced to assess crew coordination, plus a subsequent RVR 1200 feet/DH 100 feet ILS approach to a landing; and
- (D) the lower limits certification shall be annotated on the Pilot Check Report and a copy shall be retained by the air operator in the respective pilot file.

(2) Instrument Approaches - Global Positioning System (GPS) (refers to subparagraph 703.08(g)(i) of the *Canadian Aviation Regulations*)
(amended 2003/03/01)

(a) The standard requirements for authorization to fly instrument approach procedures using only GPS navigation information are:

- (i) an operational evaluation in accordance with paragraph 723.08(2)(b) has been completed by the Minister on each aircraft type/GPS/FMS model installation for which approach authorization is sought;

- (ii) the air operator has an approved flight crew training and qualifications program for use of the GPS/FMS system that meets the requirements of subsection 723.98(19); and
- (iii) standard operating procedures have been amended to reflect GPS approach operations and approved by the Minister (where required).

(b) The following items will be assessed in the operational evaluation prior to the approval of the operator's GPS approach standard operating procedures (where applicable) and training program. Identical installations of the same model of GPS in the same type of aircraft with the same operator do not need separate evaluations.

(i) Database

The geographical coverage area for the database shall be compatible with the type of operations conducted by the company. The air operator shall have procedures in place to ensure that the database will be updated in accordance with the appropriate data revision cycle. This shall include a contract with a database supplier and the inclusion, in the appropriate company manuals, of the person responsible for installing the updates in the aircraft. The company shall have a procedure in place for pilots to report database errors and for information on database errors to be passed on to other company pilots, the avionics manufacturer and the Minister.

(ii) Unit Installation and Operation

The handling and procedures associated with the GPS avionics shall be such that all operations required for GPS approach can be accomplished without an adverse impact on normal crew duties and responsibilities. GPS related tasks shall not consume the attention of the pilot not flying (PNF) during critical phases of flight (i.e. between the time the aircraft turns inbound on the final approach course and the time the aircraft is established in the climb configuration on a missed approach).

A GPS avionics installation that is used on board aircraft operated under Subpart 703 of the *Canadian Aviation Regulations* (Air Taxi) conducting single-pilot IFR GPS approaches where persons other than flight crew are carried, shall be capable of:

- (A) displaying a moving-map graphical depiction of the programmed route and the instrument procedure; and
- (B) being coupled to the auto-pilot for lateral guidance and control of the aircraft during the IFR approach.

(iii) Control Display Unit (CDU) and Course Deviation Indicator (CDI) / Distance Display

If the GPS/FMS control unit is not adequately accessible from each pilot position, or if GPS course deviation and distance displays are not within the primary field of view at both pilot stations, the air operator shall designate in the standard operating procedures the position that the pilot flying (PF) and pilot not flying (PNF) are required to occupy

during GPS approach for that type of installation. Aircraft types that are certified for operation by two crew members shall have GPS course deviation and distance displays at each pilot station. An Operations Specification authorizing GPS approaches shall not be issued unless the PNF has a means acceptable, in the Minister's opinion, of monitoring the PF during an approach.

(iv) Distance Display on the HSI

Installations where GPS guidance information (course tracking, To/From and NAV flags) are switched onto the HSI for display, but the DME distance information is not switched out (i.e. DME distance, rather than GPS distance, is displayed continuously on the HSI even when GPS source is selected to HSI), shall require the air operator, in the standard operating procedures for GPS approach, to deselect other NAV/DME sources to eliminate distance displays in the pilot's primary field of vision not related to the approach procedure being flown.

(v) Annunciation

Responses to system annunciation (including Receiver Autonomous Integrity Monitoring (RAIM) warnings), the means of selecting GPS track information to the CDI/HSI and the means of coupling GPS steering information to the aircraft automatic flight control system shall be compatible with the safe operation of the aircraft type/category. Standard operating procedures shall specify the procedure whereby the control unit is programmed, approach waypoints are verified against an independent source, approach mode is armed, and cockpit NAV source and AFC guidance source switches are selected and verified. Any switch selection or programming errors that the Minister believes are likely to occur and that could lead to a serious incident shall, if possible, be identified and addressed in training and in the standard operating procedures. Otherwise, the installation shall not be approved for approach use.

(vi) Airborne Evaluation

The Minister shall observe the pre-flight and in-flight operation of the unit on at least one GPS approach and missed approach. If the PF is allowed to occupy either seat during GPS approaches, then one approach from each pilot position shall be demonstrated. An airborne evaluation in an aircraft must take place under VFR. Emphasis shall be on crew co-ordination, pilot workload (PF and PNF), and switch selections.

DIVISION III - FLIGHT OPERATIONS

723.16 Operational Control System

Operations conducted under Subpart 703 of the *Canadian Aviation Regulations* require a Type D operational control system. Another organization may be contracted to exercise operational control on behalf of an air operator.

Type D**(1) General****(a) Application**

For all operations under Air Taxi Operations.

(b) Responsibility and Authority

Operational control is delegated to the pilot-in-command of a flight by the Operations Manager who retains responsibility for the day-to-day conduct of flight operations.

(c) Centres

Current information on the location of the air operator's aircraft shall be maintained at the main base of operations, the sub-base or, where appropriate, from the location from which flight following is being carried out.

(d) Communications

Each helicopter shall be equipped with serviceable and functioning communications equipment that permits the pilot-in-command to communicate with a ground radio station for the purpose of flight following. Such a ground station may be operated by the government, the air operator or a private agency.

(e) On Duty

A person, qualified and knowledgeable in the air operator's flight alerting procedures, shall be on duty or available when IFR or VFR at night flight operations are being conducted.

(2) Flight Following

Flight Following for a Type D system is the monitoring of a flight's progress and the notification of appropriate air operator and search-and-rescue authorities if the flight is overdue or missing.

Flight Following procedures and the standards of training and qualification for the individual performing this function shall be described in the air operator's *Company Operations Manual*.

(a) Each flight shall be conducted under an IFR Flight Plan, VFR Flight Plan or Flight Itinerary, as appropriate.

(b) The pilot-in-command is responsible for Flight Watch but shall be supported by an air operator Flight Following System that shall monitor the progress of each IFR flight or VFR at night flight from its commencement to its termination, including any intermediate stops. The person performing the flight following function, who may be the same as in paragraph (1)(e) above, shall be delegated to do so by the Operations Manager.

(c) The pilot-in-command shall be responsible for passing messages concerning aircraft landings and departures from the point of origin, at enroute stops, and from the final destination in order to satisfy the requirements of paragraph (2)(b) above.

723.18 *Operational Flight Plan*

For day VFR operations, the flight plan or flight itinerary may constitute the operational flight plan. A company flight itinerary for day VFR may be in the form of a notice board, wall map or similar flight information system at the base of operations. A written copy of the operational flight plan need not be carried or retained by the air operator for day VFR flights which originate and terminate on the same day at the same aerodrome.

(1) Minimum content of an Operational Flight Plan for VFR Night and IFR

- (a) air operator name;
- (b) date;
- (c) aircraft registration, type and model;
- (d) type of flight - IFR, VFR night;
- (e) pilot-in-command name;
- (f) departure aerodrome;
- (g) destination aerodrome;
- (h) alternate aerodrome, if applicable;
- (i) routing to destination by successive navigational way points with associated tracks for each or proposed area of operation;
- (j) routing to alternate aerodrome (IFR only, if applicable);
- (k) planned cruise altitudes;
- (l) planned cruise true air speed;
- (m) estimated time enroute and, if applicable, to alternate;
- (n) winds and temperature at cruise altitude (IFR only);
- (o) cruise ground speed;
- (p) fuel on board and fuel required;
- (q) number of persons on board;

(r) weights

- (i) Zero fuel weight,
- (ii) Fuel cargo and passenger weight, and
- (iii) Take-off weight;

(s) fuel burn enroute; and

(t) signature of pilot-in-command certifying the operational flight plan.

(2) Aircraft assigned to dedicated air ambulance operations may develop and use a modified operational flight plan provided an acceptable comparable system is shown.

(3) The operational flight plan shall permit the flight crew to record the fuel state and the progress of the flight relative to the plan.

(4) The air operator shall specify in its *Company Operations Manual* how the operational flight plan shall be recorded.

723.22 Transport of Passengers in Single-Engine Aircraft

Operations Specifications for transporting passengers at night and under IFR are not applicable to single-engine helicopters.

723.23 Aircraft Operating Over Water

The standard for authorization to operate a land aircraft over water pursuant to section 703.23 of the *Canadian Aviation Regulations* is:

(amended 2000/06/01)

- (a) the helicopter shall be equipped with an approved emergency flotation kit and operated in accordance with the Emergency Flotation Kit Flight Manual Supplement;
- (b) when enroute over water, the helicopter shall be operated at an altitude that will provide adequate time for full inflation of the flotation devices prior to water contact;
- (c) life preservers shall be carried and stowed so that they are within reach of each person carried when seated with his or her seat belt fastened;
- (d) the air operator's *Company Operations Manual* shall include passenger briefing ditching procedures and a requirement for the pilot to file a flight plan or flight itinerary; and
- (e) flights conducted over water more than 15 minutes at normal cruising speed from shore or from a suitable aerodrome shall be capable of direct flight following radio communications.

723.24 Number of Passengers in Single-Engine Aircraft

The standard for operating a single-engine helicopter where more than nine (9) passengers are carried is:

The pilot shall have successfully completed the required single-engine Pilot Proficiency Check on one of the single-engine helicopter types operated by the air operator which is to be operated carrying more than nine (9) passengers.

723.28 VFR Flight Minimum Visibility - Uncontrolled Airspace

The standard for reduced VFR visibility limits of one half mile in uncontrolled airspace for helicopters is as follows:

(amended 1998/06/01)

(a) Pilot experience

(amended 1998/06/01)

Before conducting operations in reduced visibility, pilots shall have achieved at least 500 hours of pilot-in-command experience in helicopters;

(b) Airspeed for operation in reduced visibility

(amended 1998/06/01)

Helicopters shall be operated at a reduced air speed that will provide the pilot-in-command adequate opportunity to see and avoid obstacles;

(c) Pilot training

(amended 1998/06/01)

The pilot shall receive training as follows:

(amended 2000/12/01)

(i) initially and every three years thereafter, pilot decision making training which shall include the following topics;

(amended 2000/12/01)

(A) the decision making process, including modules on factors which affect good judgement;

(amended 2000/12/01)

(B) human performance factors, including modules on physical, psychological and physiological phenomena and limitations; and

(amended 2000/12/01)

(C) human error countermeasures and good airmanship;

(amended 2000/12/01)

(ii) initial and annual recurrent flight training in procedures specified in the *Company Operations Manual* for operations in reduced visibility; and

(d) Company Operations Manual

(amended 1998/06/01)

The *Company Operations Manual* shall contain:

- (i) low visibility operational procedures; and
- (ii) pilot decision-making considerations for operation in visibility conditions of less than one mile, including but not limited to:
 - (A) gross weight,
 - (B) wind,
 - (C) weather,
 - (D) route / terrain,
 - (E) time of day,
 - (F) communications, and
 - (G) the potential for white-out.

723.30 Take-Off Minima**(1) Weather Below Landing Limits**

The standard for authorization to conduct a take-off in IMC when weather conditions are above take-off, but below landing minima for the runway in use are:

- (a) the helicopter is multi-engine;
- (b) an alternate aerodrome is specified in the IFR flight plan; and
- (c) that aerodrome is located within the distance which can be flown in 60 minutes at the normal cruising speed.

(2) Weather Below Published Take-off Minima**Take-off Minima - Reported RVR 600 feet**

- (a) The *Company Operations Manual* shall contain detailed guidance on how to determine departure one engine inoperative climb gradient and obstacle clearance.
- (b) The take-off runway is equipped with:
 - (i) serviceable and functioning high intensity runway lights, runway centre line lights and centre line markings that are plainly visible to the pilot throughout the take-off; and
 - (ii) at least one transmissometer, situated at either the approach end or mid point of the take-off runway with a reading of not less than RVR 600 feet.

(c) The pilot-in-command is satisfied that the required RVR 600 feet visibility exists for the take-off runway and visual reference to the runway can be maintained at least until V_{toss} (take-off safety speed) and V_{mini} (instrument flight minimum speed) have been attained.

(d) The pilot-in-command and second-in-command attitude (artificial horizon) instruments incorporate pitch attitude index lines in appropriate increments above and below the zero pitch reference to at least 15 degrees and incorporate operative failure warning systems which will immediately detect essential instrument malfunction or failure.

(e) The pilot-in-command, and the second-in-command if authorized by the air operator for RVR 600 feet take-off, shall have been checked conducting RVR 600 feet take-offs and rejected take-offs by an approved company check pilot or a Transport Canada Inspector within the preceding 12 months in a synthetic flight training device capable of visually depicting RVR 600 feet. The RVR 600 feet take-off certification shall be annotated on the Pilot Check Report form.

723.31 No Alternate Aerodrome - IFR Flight

The helicopter standard for authority to conduct an IFR flight when an alternate aerodrome has not been designated in the IFR flight plan or in the IFR flight itinerary is as follows:

(a) the *Company Operations Manual* shall contain guidance on the execution of no alternate IFR flights and the flight is operated under a Type C Operational Control System;

(b) flight following personnel are to be aware that the flight is operating no alternate IFR and shall have current weather readily accessible for timely communication to the flight;

(c) pilots-in-command are to be familiar with diversionary aerodromes;

(d) terminal forecasts and weather reports shall be available for the destination and shall indicate that, at the estimated time of arrival and for one (1) hour after the estimated time of arrival, there will be:

(amended 2003/06/01)

(i) a ceiling of at least 1,000 feet above the airport elevation, or at least 400 feet above the lowest applicable approach minima, whichever is higher, and a visibility of at least two (2) statute miles.

(amended 2003/06/01)

723.33 VFR OTT Flight

The standard for VFR over-the-top flight for helicopters carrying passengers is:

(1) the flight shall be conducted in accordance with the requirements of Subpart 602 (Visual Flight Rules) of the *Canadian Aviation Regulations*;

(2) for IFR certified multi-engine helicopters where the pilot holds a group IV instrument rating the flight shall be operated under conditions allowing, if an engine fails, descent under VMC or continuation of the flight under IFR or VFR; and
(amended 2005/06/01)

(3) for multi-engine helicopters not certified for IFR, where the pilot holds a group IV instrument rating, the flight shall be operated under conditions allowing, if an engine fails, descent or continuation of the flight under VMC conditions.
(amended 2005/06/01)

723.34 Routes in Uncontrolled Airspace

The standard for establishing company routes in uncontrolled airspace is:

(1) A minimum obstruction clearance altitude (MOCA) shall be established for each route segment by the use of aeronautical charts and the *Canada Flight Supplement* for updating of significant obstructions as follows:

(a) for flight under IFR or in IMC, a minimum altitude of 2,000 feet above the highest obstacle located within a horizontal distance of 10 miles from the centre line of the route; or

(b) for flight at night in VFR conditions a minimum altitude of 1,000 feet above the highest obstacle located within 3 miles from the centre line of the route.

(2) For each route segment a minimum enroute altitude (MEA) shall be established which meets or exceeds the minimum obstruction clearance altitude and assures navigational signal coverage. For line of sight navigation aid reception distance for ground installed aids, the minimum reception altitude may be calculated by calculating the square root of an altitude above the navigation aid and multiplying the result by 1.25 (Sq. root 3000 ft. is 54.7 x 1.25 = 68 miles). The MEA will be established to the nearest higher 100 foot increment.

(3) each route shall include:

(a) the route segment;

(b) track;

(c) MOCA;

(d) MEA;

(e) distance between fixes or waypoints; and

(f) navigation aids;

(4) The air operator shall maintain a record of their company routes in a form and format similar to the Catalogue of Approved Routes.

Provided the above procedures are followed, an air operator's pilot may use routes that are not yet contained in the record of company routes;

(5) Prior to initial use of other than publicly available navigation aids, permission of the owner/operator shall be obtained and retained in company records. No VFR at night or IFR flights shall commence unless the navigation aids upon which the route is predicated are in satisfactory operating condition.

When company routes are predicated on other than publicly available navigation aids and arrangements have not been made with the owner/operator to advise when the navigation aid is out of service, instructions to pilots shall be included on how, and whom to contact, to confirm the status of the navigation aid.

(6) The air operator's *Company Operations Manual* shall be amended to outline the above procedures and information for pilot guidance.

(7) the flight visibility shall not be less than 3 miles for flights in VFR at night.

723.36 Minimum Altitudes and Distances

(1) For air operator authority to operate a helicopter over a built-up area at altitudes and distances less than those specified in Section 602.14 of the *Canadian Aviation Regulations* or to conduct a landing or take-off within the built-up area of a city or town, a plan shall be submitted to the Transport Canada Aviation Regional Office in the region in which the flights are to take place at least five working days in advance of the operation, and include:

(amended 1998/06/01)

(a) certification that the governing municipality has been informed of the proposed operation;

(amended 1998/06/01)

(b) purpose of the flights;

(c) dates, alternate dates and proposed time of day of the operation;

(d) location of the operation;

(e) type of aircraft to be used;

(f) altitudes and routes to be used, depicted on a map of the area;

(g) procedures and precautions to be taken to ensure no hazard is created to persons or property on the surface, including locations of forced landing areas in the event of an emergency; and

(h) name of the contact person designated by the air operator.

(amended 1998/06/01)

(2) For operating certificate authority the air operator shall submit an application providing the above information as applicable, show a requirement for operating certificate authority and amend its *Company Operations Manual* to include the routes and conditions for its use.

(amended 1998/06/01)

723.37 Weight and Balance System

An air operator shall publish in its operations manual a system to ensure that during any phase of flight operations the loading, weight and centre of gravity of the aircraft complies with the limitations specified in the approved flight manual.

The weight and balance system shall:

- (1) establish an operational empty weight and centre of gravity for each aircraft and configuration;
- (2) establish passenger and cargo weight determination procedures. Weight of passengers and cargo may be determined by using approved standard weights or approved survey weights for passengers and actual weight of cargo;
- (3) establish weights for calculation of fuel weight which may be determined using actual specific gravity or a standard specific gravity;
- (4) provide weight and centre of gravity forms for calculation of maximum take-off and landing weights and calculation of longitudinal and lateral CG position;
- (5) establish preparation and disposition requirements of weight and balance forms;
- (6) establish loading procedures, including floor loading limits and cargo restraint requirements; and
- (7) provide for initial and annual system training to air operator personnel responsible for the weight and balance system.

723.38 Passenger and Cabin Safety Procedures

(1) Safe Movement of Passengers to and from the Helicopter

The procedures for the safe movement of passengers to and from the helicopter shall include:

- (a) wherever possible, helicopters are parked in a location that avoids passenger exposure to hazardous conditions;
- (b) passengers are alerted to hazardous conditions;
- (c) guidance and, where necessary, an escort is provided to ensure passengers are directed along a safe route to or from the helicopter;
- (d) smoking restrictions are enforced; and

(e) personal headsets that are used with personal entertainment systems that decrease awareness of other traffic or limit reception of audible direction or warning signals are not worn.

(amended 1999/09/01)

(2) Fuelling with Passengers on Board

Helicopters may be fuelled with passengers on board, embarking or disembarking, under the following conditions:

- (a) the pilot supervises the fuelling and remains near the helicopter main exit to immediately communicate with and assist in the evacuation of passengers in an emergency;
- (b) all exits are clear of obstruction and available for passenger evacuation;
- (c) the helicopter engines are not running;
- (d) electrical power supplies are not being connected or disconnected, and any equipment likely to produce sparks or arcs is not being used;
- (e) smoking is not permitted in the helicopter or in the vicinity of the helicopter;
- (f) fuelling is suspended when there are lightning discharges within 8 kilometres of the helicopter;
- (g) combustion heaters in the helicopter or in the vicinity of the helicopter are not operated;
- (h) known high energy equipment such as High Frequency (HF) radios and weather-mapping radar are not operated, unless in accordance with the approved flight manual where the manual contains procedures for the use of this equipment during fuelling; and
- (i) photographic equipment is not used within 10 feet (3 metres) of the fuelling equipment or the fill or vent points of the helicopter fuel systems.

(3) Use of Portable Electronic Devices

The prohibited devices, the permitted devices without restrictions and the permitted devices with restrictions are defined as follows, and are to be used in accordance with the stated requirements as applicable:

(amended 1999/09/01)

(a) Prohibited Devices

Any transmitting device that intentionally radiates radio frequency signals;

(b) Permitted Devices Without Restrictions

- (i) hearing aids,
- (ii) heart pacemakers,

- (iii) electronic watches, and
- (iv) properly certificated air operator installed equipment;

(c) Permitted Devices With Restrictions

- (i) personal life support systems may be operated during all phases of flight, provided that the device does not cause interference with the helicopter's systems or equipment;
- (ii) portable two-way radio communication devices may be used subject to all of the following conditions and restrictions being met:
 - (A) use is prohibited at all times when the helicopter engines are running, excluding the auxiliary power unit,
 - (B) when the pre-flight safety briefing begins prior to engine start, use is terminated during the delivery of the pre-flight safety briefing and demonstration, and
 - (C) the company operations manual contains procedures to ensure these devices are turned off and properly stowed during the delivery of the pre-flight safety briefing and demonstration and while the helicopter engines are running;
- (iii) other portable electronic devices may be used, except during take-off, climb, approach and landing.

(4) Passengers shall be informed of the air operator's policy pertaining to the use of portable electronic devices and those devices that are prohibited from use during the delivery of the pre-flight safety briefing and demonstration.

(amended 1999/09/01)

(5) When interference with the helicopter's systems or equipment is suspected from use of a portable electronic device, crew members shall:

(amended 1999/09/01)

- (a) confirm passenger use of portable electronic device(s),
- (b) instruct passenger(s) to terminate the use of portable electronic device(s),
- (c) prohibit the use of suspected portable electronic device(s); and
- (d) recheck the helicopter's systems and equipment.

(6) The pilot-in-command shall report incidents of portable electronic device interference and include the following information in the report:

(amended 1999/09/01)

- (a) Flight Information - helicopter type, registration, date and UTC time of incident, helicopter location (VOR bearing/DIST/LAT/LONG), altitude, weather conditions, pilot name and telephone number,
- (b) Description of Interference - description of effects on cockpit indicators, audio or systems, including radio frequency, identification, duration, severity and other pertinent information,

- (c) Action Taken by Pilot/Crew to Identify Cause or Source of Interference,
- (d) Identification of Portable Electronic device - description of device, brand name, model, serial number, mode of operation (i.e. FM radio), device location (seat location), and regulatory approval number (FCC/other),
- (e) Identification of User - name and telephone number of passenger operating the device, and
- (f) Additional Information - as determined pertinent by the crew.

(7) Reports of portable electronic device interference shall be submitted to the Director, Safety Services, Transport Canada, Transport Canada Building, Place de Ville, Ottawa, Ontario K1A 0N8.

(amended 1999/09/01)

723.39 Briefing of Passengers

(1) Standard Safety Briefing

The standard safety briefing shall consist of an oral briefing provided by a flight crew member or by audio or audiovisual means which includes the following information, as applicable to the helicopter, equipment, and operation:

- (a) prior to take-off (or prior to embarking when rotors are turning):
 - (i) when, where, why and how carry-on baggage is required to be stowed;
 - (ii) the fastening, unfastening, tightening and general use of safety belts or safety harnesses;
 - (iii) the location of normal and emergency exits and how the exits operate;
 - (iv) the location, purpose of, and advisability of reading the safety features cards;
 - (v) the requirement to obey crew instructions;
 - (vi) the location of any emergency equipment the passenger may have a need for in an emergency situation such as the ELT, fire extinguisher, survival equipment (including the means to access if in a locked compartment), first aid kit and life raft;
 - (vii) the location and use of life preservers, including how to remove them from stowage/packaging and a demonstration of their location, method of donning and inflation, and when to inflate life preservers;
 - (viii) instructions for immersion suits;
 - (ix) location, operation and deployment of life rafts;

(x) where applicable to wide body helicopters, the method of egress in event of a roll-over accident by use of the under seat frame of the transverse cabin seats as a ladder for egress; and

(xi) any special instructions related to emergency evacuation if the helicopter is configured with external fixtures. (e.g. ski racks); and

(b) after take-off, if not included in the pre-take-off briefing:

(i) the advisability of using safety belts or safety harnesses during flight;

(c) in-flight because of turbulence:

(i) when the use of seat belts is required; and

(ii) the requirement to stow carry-on baggage;

(d) prior to disembarking of passengers, the safest direction and most hazard-free route for passenger movement away from the helicopter, and any dangers associated with the helicopter, such as pitot tube locations, tail rotor and main rotor.

Where no additional passengers have boarded the flight for subsequent take-offs on the same day, the pre take-off and after take-off briefing may be omitted provided a crew member has verified that all carry-on baggage is properly stowed, safety belts or harnesses are properly fastened, and seat backs and chair tables are properly secured.

(2) Individual Safety Briefing

The individual safety briefing shall include:

(a) any information contained in the standard safety briefing and the safety features card that the passenger would not be able to receive during the normal conduct of that safety briefing; and

(b) additional information applicable to the needs of that person as follows:

(i) the most appropriate brace position for that passenger in consideration of his or her condition, injury, stature, and/or seat orientation and pitch;

(ii) the location to place any service animal that accompanies the passenger;

(iii) for a mobility restricted passenger who needs assistance in moving expeditiously to an exit during an emergency:

(A) a determination of what assistance the person would require to get to an exit;

(B) the route to the most appropriate exit;

(C) the most appropriate time to begin moving to that exit; and

(D) a determination of the most appropriate manner of assisting the passenger;

- (iv) for a visually impaired person:
 - (A) detailed information of and facilitating a tactile familiarization with the equipment that he or she may be required to use;
 - (B) advising the person where to stow his or her cane if applicable;
 - (C) the number of rows of seats between his or her seat and his or her closest exit and alternate exit;
 - (D) an explanation of the features of the exits; and
 - (E) if requested, facilitating a tactile familiarization with the exit;
- (v) for a comprehension restricted person:
 - (A) while using the safety features card, pointing out the exits to use, and any equipment that he or she may be required to use;
- (vi) for persons with a hearing impairment:
 - (A) while using the safety features card, pointing out the emergency exits and other equipment that the person may be required to use; and
 - (B) communicating detailed information by pointing, face-to-face communication permitting speech reading, pen and paper, through an interpreter or through their attendant;
- (vii) a passenger who is responsible for another person on board, information pertinent to the needs of the other person as applicable:
 - (A) in the case of an infant:
 - (I) seat belt instructions;
 - (II) method of holding the infant for take-off and landing;
 - (III) instructions pertaining to the use of a child restraint system; and
 - (IV) recommended brace position;
 - (B) in the case of any other person:
 - (I) instructions pertaining to the use of a child restraint system; and
 - (II) evacuation responsibilities; and
- (viii) for an unaccompanied minor, instructions to pay close attention to the normal safety briefing and to follow all instructions.

NOTE:

A passenger that has been provided with an individual safety briefing need not be re-briefed following a change in crew if the crew member that provided the individual safety briefing has

advised a member of the new crew of the contents of that briefing, including any information respecting the special needs of that passenger.

A passenger may decline an individual safety briefing.

(3) Passenger Preparation for an Emergency Landing

The emergency briefing provided in the event of an emergency where time and circumstances permit shall consist of instructions pertaining to:

- (a) safety belts or safety harnesses;
- (b) seat backs and tables;
- (c) carry-on baggage;
- (d) safety features cards;
- (e) brace position (when to assume, how long to remain)
- (f) life preservers if applicable; and
- (g) if applicable, evacuation procedures for an occupant of a child restraint system.

(amended 1999/09/01)

(4) Safety Features Card or Placards

The safety feature card or placards shall contain the following information as applicable to the helicopter and equipment carried:

- (a) general safety information, including:
 - (i) smoking prohibition;
 - (ii) each type of safety belt or safety harness installed for passenger use, including when to use and how to fasten, tighten and release; and
 - (iii) where baggage must be stowed;
- (b) emergency procedures and equipment, including:
 - (i) location of first aid kits;
 - (ii) location of fire extinguishers that would be accessible to the passengers;
 - (iii) location of Emergency Locator Transmitters;
 - (iv) location of survival equipment and, if the stowage compartment is locked, the means of access or location of the key;
 - (v) passenger brace position for impact, as appropriate for each type of seat and restraint system installed for passenger use, including the brace position for an adult holding an infant;
 - (vi) method of the egress in event of a roll over accident;

- (vii) the location, operation and method of using each exit on the helicopter;
 - (viii) the safest direction and most hazard-free escape route for passenger movement away from the helicopter following evacuation;
 - (ix) location and use of life rafts; and
 - (x) location, and use of life preservers;
- (c) the safety card shall bear the name of the air operator and the helicopter type and shall contain only safety information;
- (d) the safety information provided by the card shall:
- (i) be accurate for the helicopter type and configuration in which it is carried and in respect of the equipment carried;
 - (ii) be presented with clear separation between each instructional procedure. All actions required to complete a multi-action procedure are to be presented in correct sequence and the sequence of actions clearly identified; and
 - (iii) be depicted in a clear and distinct manner.

DIVISION IV - AIRCRAFT PERFORMANCE OPERATING LIMITATIONS

There are currently no standards published for this Division

DIVISION V - AIRCRAFT EQUIPMENT REQUIREMENTS

There are currently no standards published for this Division

DIVISION VI - EMERGENCY EQUIPMENT

723.82 Equipment Standards and Inspection

(1) Survival Equipment

(a) Flights Over Land

- (i) The *Company Operations Manual* shall show how compliance with Section 602.61 of the *Canadian Aviation Regulations* is to be achieved;
- (ii) list equipment on board and information on how to use it;
- (iii) a survival manual appropriate for the season and climate shall be carried on board, and
- (iv) crew members shall be trained in accordance with subsection 723.98(24);

(b) Where life rafts are required to be carried in accordance with Section 602.63 of the *Canadian Aviation Regulations* they shall be equipped with an attached survival kit containing at least the following:

- (i) a pyrotechnic signalling device;
- (ii) a radar reflector;
- (iii) a life-raft repair kit;
- (iv) a bailing bucket and sponge;
- (v) a signalling mirror;
- (vi) a whistle;
- (vii) a raft knife;
- (viii) an inflation pump;
- (ix) dye marker;
- (x) a waterproof flashlight;
- (xi) a two day supply of water, calculated using the overload capacity of the raft, consisting of one pint of water per day for each person or a means of desalting or distilling salt water sufficient to provide an equivalent amount;
- (xii) a fishing kit;
- (xiii) a book on sea survival; and
- (xiv) a first aid kit containing antiseptic swabs, burn dressing compresses, bandages and anti-motion sickness pills.

(2) First Aid Kit Contents

A first aid kit required by section 602.60 of the *Canadian Aviation Regulations* shall contain the supplies and equipment for a Type A kit set out in Schedule II of Part X of the *Aviation Occupational Safety and Health Regulations*. In addition, each kit shall contain one pair of protective non-permeable gloves made of latex or equivalent material.
(amended 2001/06/01)

DIVISION VII - PERSONNEL REQUIREMENTS**723.86 *Minimum Crew***

The standard for the operation of a helicopter in IFR flight with passengers on board without a second-in-command is:

- (1) the helicopter is multi-engine and certified in the flight manual for single-pilot IFR operation;
- (2) the pilot shall have at least 1,000 hours helicopter flight time, which shall include 100 hours pilot-in-command on multi-engine helicopters. In addition, the pilot shall have 50 hours of simulated or actual flight in IMC, and a total of 50 hours flight time on the helicopter type;
- (3) the pilot proficiency check shall be conducted in the helicopter type or in an approved synthetic flight training device for the type and include:
 - (a) knowledge of the auto-pilot operations and limitations;
 - (b) performance of normal and emergency procedures without assistance; and
 - (c) demonstration of the use of the auto-pilot during appropriate phases of flight; and
- (4) a pilot's single-pilot proficiency check, if still valid, is transferable between air operators which have an Air Operator Certificate authority to conduct such operations and utilizing the same type of helicopter.

723.88 *Flight Crew Member Qualification***(1) Pilot Proficiency Check**

- (a) The Pilot Proficiency Check in a helicopter shall be conducted in accordance with the Pilot Proficiency Check - Helicopter Schedule of this subsection.
- (b) A pilot proficiency check shall be conducted in a manner that enables the pilot to demonstrate the knowledge and skill respecting:
 - (i) the helicopter, its systems and components;
 - (ii) proper control of airspeed, direction, altitude, attitude and configuration of the helicopter, in accordance with the procedures and limitations set out in the helicopter operating manual where applicable, the Helicopter Flight Manual, the air operator's *Company Operations Manual*, the air operator's Standard Operating Procedures, the check list, and any other information relating to the operation of the helicopter type; and
 - (iii) departure, enroute and arrival procedures and other applicable procedures.
- (c) Each manoeuvre or procedure within a phase of flight specified in the Pilot Proficiency Check shall be performed in the helicopter or approved synthetic flight training device.

(d) A pilot-in-command check shall be completed in the seat normally occupied by the pilot-in-command and a second-in-command check shall be completed in the seat normally occupied by the second-in-command.

(e) A Transport Canada inspector or an approved check pilot shall determine whether a person has demonstrated the knowledge and the skill in accordance with the following factors:

- (i) the pilot's adherence to approved procedures; and
- (ii) the pilot's qualities of airmanship in selecting a course of action.

(f) During the pilot proficiency check, the person conducting the check may request any manoeuvre or procedure, from the Schedule to this subsection, required to determine the proficiency of the candidate.

(g) Where the pilot is required to hold an instrument rating, the PPC shall include the instrument procedures portion of the Schedule to this subsection. This shall constitute the issue or renewal of the instrument rating. Where more than one type which requires an instrument rating is flown, the PPC on only one of these types need include instrument procedures.

(h) A synthetic flight training device (FTD) checking and training credits shall be approved by Transport Canada in the training program approval process for each helicopter type. Training and checking procedures not approved for the synthetic flight training device shall be completed in the helicopter.

(2) Competency Check

The standard for the Competency Check for pilots flying as second-in-command on multi-engine helicopters operating under IFR or VFR conditions is:

- (a) the chief pilot, or a pilot delegated by the chief pilot shall certify the competency of the pilot to perform the duties of second-in-command on each multi-engine helicopter type flown; and
- (b) the pilot shall be certified as competent in the performance of the Pilot Proficiency Check items applicable to multi-engine helicopters.

(3) Use of Other Than a pilot employed by an Air Operator for Training and Checking

(amended 1998/06/01)

The standard for authorization to permit a person not qualified in accordance with paragraphs 703.88(b), (c), and (d) to act as a flight crew member is:

- (a) the person is not an employee of the air operator and is assigned for the purpose of conducting flight training for the air operator's first flight crews on a new helicopter type;

(amended 1998/06/01)

(b) the air operator provides a resume, proof of background on helicopter type and recent experience appropriate to the assignment on behalf of the pilot; and

(c) the pilot is the holder of an appropriate licence and rating. Where the pilot holds a foreign pilot licence the licence and, as applicable, the instrument rating shall be validated by the Minister.

(amended 1998/06/01)

The pilot may be authorized to conduct pilot checks provided the requirements of the *Company Check Pilot Manual* are met with the exception of employment time with the air operator.

A foreign licensed pilot may be granted authority only when a Canadian licensed pilot is not available.

SCHEDULE - Pilot Proficiency Check - Helicopter

(1) Pre-flight Phase

(a) Flight Planning

- (i) a practical oral examination on applicable flight planning procedures, flight planning information sources and maintenance release procedures; and
- (ii) a practical oral examination on the *Helicopter Flight Manual* including limitations, loading, weight and balance, applicable flight manual supplements and the significance and use of performance charts.

(b) Pre-flight Inspection

- (i) a visual and, as applicable, functional exterior and interior inspection of the helicopter to show a practical knowledge of the airframe, major components, systems and applicable servicing procedures;
- (ii) use of check lists and procedures, including engine and system checks; and
- (iii) pre-flight checks of communications, navigation, electrical, flight instruments and ice protection systems, as appropriate.

(2) Flight Phase

(a) Taxiing and Hover Manoeuvres

- (i) taxiing includes, when appropriate to the helicopter configuration, both ground and air taxi and, where a second-in-command is undergoing the Pilot Proficiency Check, taxiing to the extent practical from the second-in-command position;
- (ii) taxiing in compliance with instructions issued by air traffic control or by the person conducting the pilot proficiency check;
- (iii) compliance with appropriate taxi, hover and pre-departure check procedures;
- (iv) 360 degree hover turns, sideward and rearward hovering manoeuvres and, when practical, out of wind stationary hovering;
- (v) landing from a hover to a sloped surface and take-off to a hover from a sloped surface; and
- (vi) landing following simulated engine failure during hover or air taxi.

(b) Departure, Air Work, Approaches

- (i) normal transition to forward flight, climb to assigned altitude and normal approach and landing;
- (ii) for single-engine and multi-engine helicopters, a take-off with a rapid deceleration or rejected take-off procedure;
- (iii) for multi-engine helicopters, a simulated failure of one engine during take-off that will allow continued climb in forward flight;
- (iv) at assigned altitude climbs, descents and level flight throughout the normal speed range of the helicopter, including steep turns with a change of heading of at least 180 degrees but not more than 360 degrees;
- (v) for single-engine helicopters, autorotation approaches terminating at a pre-determined area in a landing or power recovery at the discretion of the air operator. At least one approach shall require a turn during autorotation descent through at least 180 degrees;
(amended 1999/09/01)
- (vi) for multi-engine helicopters, a simulated engine failure at assigned cruise altitude and an approach and landing with one engine inoperative;
- (vii) confined landing area procedure and approach terminating in a landing, hover or rejected approach and, when practical, a confined area departure; and
- (viii) steep approach which may be combined with the confined area procedure.

(c) Instrument Procedures

Instrument procedures will consist of IFR pre-flight preparation, departure and enroute procedures, terminal procedures and system malfunctions.

- (i) instrument take-off so that instrument flight conditions are entered or simulated at or before reaching an altitude of 200 feet above take-off elevation;
- (ii) an area departure and an area arrival procedure where the pilot:
 - (A) adheres to actual or simulated air traffic control clearances and instructions; and
 - (B) properly uses available navigation facilities;
- (iii) a holding procedure that may be combined with an area arrival or departure and includes entry to, maintaining of and leaving a holding pattern;
- (iv) at least two instrument approaches performed in accordance with procedures and limitations for the approach facility used;

- (v) at least one missed approach procedure and at least one landing after transition from an instrument approach procedure; and
- (vi) emergencies and system malfunctions may be simulated during any phase of the flight;

(d) Normal and Abnormal Procedures

The pilot shall demonstrate use of as many of the normal and abnormal procedures for installed systems, devices and aids as the person conducting the check finds necessary to determine that the pilot has the knowledge and ability to properly use installed equipment such as:

- (i) anti-icing and de-icing systems;
- (ii) automatic flight control and auto-pilot systems; and
- (iii) weather radar;

(e) Emergency Procedures, Malfunctions and Flight Characteristics

(i) Emergency and Malfunctions

The pilot shall demonstrate or, where demonstration is impractical, show knowledge of, proper procedures for as many of the emergency situations and malfunctions listed below as necessary to determine adequate knowledge and ability:

- (A) fire in flight;
- (B) smoke control;
- (C) anti-torque control failure and malfunctions;
- (D) emergency descent;
- (E) hydraulic and electrical system failures and malfunctions;
- (F) flight instrument system failure and malfunction; and
- (G) any emergency procedure included in the flight manual or helicopter operating manual; and

(ii) Flight Characteristics

The pilot shall show a practical knowledge of:

- (A) settling with power, vortex ring state and dynamic rollover to determine that the pilot is aware of causes, prevention and appropriate recovery procedures; and
- (B) applicable flight characteristics peculiar to the helicopter type and configuration.

723.89 *Qualifications of Operational Control Personnel*

A person assigned to an operational control position shall comply with the training standards of section 723.98.

723.91 *Validity Period*

(1) Where a flight crew member's training on type has expired for a period of 24 months or more, that crew member shall successfully complete the air operator's initial ground and flight training on type before re-assignment as pilot on the type.

(2) Where a flight crew member's Pilot Proficiency Check has expired for a period of 24 months or more, that flight crew member shall, following completion of the air operator's initial helicopter type ground and flight training, successfully complete the initial pilot proficiency check on the type of helicopter.

DIVISION VIII - TRAINING PROGRAMS

723.98 *Training Program*

The syllabus of each training program shall include the programmed time allotted and the subject matter to be covered.

(1) General Training Standard

(a) Manuals, if applicable, shall be provided during training to each trainee on the subject matter to be taught.

(b) Relevant training aids such as fire extinguishers, life preservers, rafts, aircraft components, static aircraft, etc. shall be available for the program being presented.

(c) Comprehensive examinations shall be used to validate competence of the trainee.

(2) Flight Crew Training on a Contract Basis

An air operator may contract crew member training to another organization provided:

(a) the arrangement is clearly provided for in the approved training program;

(b) the outside organization uses the manuals and publications used by the air operator (SOPs, *Rotorcraft Flight Manual*, *Aircraft Operating Manual*, if applicable, *Company Operations Manual*, etc.);

(c) the air operator ensures that the training is conducted in accordance with the approved program;

(d) where type training is conducted, the training is provided on the type and model operated by the air operator unless otherwise provided for in the approved training program; and

(e) the air operator maintains training records as required by Subpart 703 of the *Canadian Aviation Regulations*.

(3) Training and Qualifications of Training Personnel

(a) Instructor - Ground Training

(i) has satisfied the air operator that he or she has the knowledge and skills required to conduct the training; and

(ii) if conducting helicopter type training, has successfully completed the ground school for the type of helicopter.

(b) Qualifications and Responsibilities of a Training Pilot (Flight)

(i) Qualifications

(A) hold the licence and ratings appropriate for the type of helicopter and type of operation; and

(B) know the contents of the *Rotorcraft Flight Manual*, Aircraft Operating Manual (if applicable), *Company Check Pilot Manual*, Company Operations and Training Manuals and the operator's Standard Operating Procedures for the helicopter type, and the provisions of the regulations and standards.

(amended 1998/06/01)

(ii) Responsibilities

The Training Pilot is responsible for monitoring the operation and identifying problems which may require the provision of extra training or changes in operational procedures. The training pilot is responsible, together with the Chief Pilot, for the establishment and promulgation of the standards and piloting techniques with which flight crew will be expected to comply during flight operations and which the flight crew will be required to demonstrate during initial and recurrent checks. Particular responsibilities are:

(A) conducting ground, synthetic flight training device and flight training of all flight crew in accordance with the approved training program;

(B) supervision of the standards and recommending amendments to their respective aeroplane operating manuals and standard operating procedures;

(C) maintaining the air operator's training records;

(D) liaison with crew scheduling concerning training details; and

(E) any responsibilities assigned by the Chief Pilot.

(c) Qualifications and Responsibility of a Training Pilot (Synthetic Training Device)**(i) Qualifications**

- (A) hold or have the licence and ratings appropriate for the type of helicopter and type of operation;
- (B) have completed the air operator's ground school and synthetic training device program for the type of helicopter;
- (C) have successfully completed within the past 12 months a Pilot Proficiency Check in the synthetic training device or helicopter for that type;
- (D) know the contents of the Aircraft Operating Manual (if applicable), *Rotorcraft Flight Manual*, Operations and Training Manuals and as applicable the *Company Check Pilot Manual* and the air operator's Standard Operating Procedures for the helicopter type, and the provisions of the regulations and standards; and
- (E) have received instruction on the operation of the synthetic training device from an instructor qualified to operate the synthetic training device.

(ii) Responsibilities

The Training Pilot is responsible for monitoring the operation and identifying problems which may require the provision of extra training or changes in operational procedures. The training pilot is responsible, together with the Chief Pilot, for the establishment and promulgation of the standards and piloting techniques with which flight crew will be expected to comply during flight operations and which the flight crew will be required to demonstrate during initial and recurrent checks. Particular responsibilities are:

- (A) conducting ground and synthetic flight training of all flight crew in accordance with the approved training program;
- (B) supervision of the standards and recommending amendments to their respective helicopter operating manuals and Standard Operating Procedures;
- (C) maintaining the air operator's training records;
- (D) liaison with crew scheduling concerning training details; and
- (E) any responsibilities assigned by the Chief Pilot.

(4) Training Program Standards

Ground training programs shall provide a means of evaluating the trainee after completion of the syllabus by completion of an examination with a review and correction of any errors. Training examinations should be comprehensive, and periodically reviewed and updated.

Type training programs are to be titled as to the type to which they apply and include the number of instructional hours to be provided. They should be performance oriented and stress the operation (normal, emergency and malfunctions) of the helicopter systems and equipment. Instruction related to components and systems that flight crews cannot control, influence or operate should be minimized.

(5) Company Indoctrination Training

This training is required upon employment for all persons assigned to an operational control function, including base managers, pilots and persons responsible for flight following. The program shall ensure that persons involved in control of flight operations are aware of their responsibilities, know company reporting relationships and are competent to fulfil their assigned duties related to flight operations. Company indoctrination training shall include, as applicable:

- (a) the *Canadian Aviation Regulations* and applicable Standards;
- (b) Air Operator Certificate and Operations Specifications;
- (c) company organization, reporting relationships and communication procedures, including duties and responsibilities of flight crew members and the relationship of those duties to other crew members;
- (d) flight planning and operating procedures;
- (e) fuelling procedures including procedures for fuelling with passengers on board and fuel contamination precautions;
- (f) critical-surface contamination and safety awareness program;
- (g) passenger safety briefings and safe movement of passengers to/from the helicopter;
- (h) use and status of the *Company Operations Manual* including maintenance release procedures and accident/incident reporting procedures;
- (i) use of minimum equipment lists (if applicable);
- (j) aircraft icing and other meteorological training appropriate to the area of operations;
- (k) navigation procedures and other specialized operations applicable to the operator;
- (l) accident/incident reporting;
- (m) passenger on board medical emergency;
- (n) handling of disabled passengers;
- (o) carriage of external loads;
- (p) operational control system;
- (q) weight and balance system procedures;

- (r) standard operating procedures (if applicable); and
- (s) pre-flight crew member briefing.

(6) Technical Ground Training - Initial and Recurrent

This training shall ensure that each flight crew member is knowledgeable with respect to helicopter systems and all normal, abnormal and emergency procedures. The following subjects shall be included:

- (a) helicopter systems operation and limitations as contained in the Helicopter Flight Manual and Aircraft Operating Manual, and Standard Operating Procedures;
- (b) operation of all equipment that is installed in all helicopters of the same type operated by the air operator;
- (c) differences in equipment that is installed in all helicopters of the same type in the air operator's fleet;
- (d) applicable Standard Operating Procedures for pilot flying and pilot not flying duties for normal, abnormal and emergency procedures for the helicopter;
- (e) helicopter performance and limitations; and
- (f) weight and balance procedures.

Technical ground training shall be conducted annually.

(7) Synthetic Flight Training Device

(a) A Synthetic Flight Training Device has two classifications:

- (i) Full flight simulator (FFS); and
- (ii) Flight Training Device (FTD).

(8) Level A or B Training Program (if applicable)

(amended 2008/12/30)

An air operator with an approved Level A or B training program using a Level A or better FFS approved in accordance with the *Aeroplane and Rotorcraft Simulator Manual* is permitted to conduct most initial, upgrade and recurrent training in that simulator. Additionally, flight training in a helicopter must be carried out for general handling and landing manoeuvres for initial and upgrade training.

(amended 2008/12/30)

(a) The following training in Standard Operating Procedures for normal, abnormal and emergency operation of the helicopter systems and components shall be carried out in the FFS:

- (i) use of checklists;

- (ii) flight crew co-operation, command and co-ordination;
- (iii) helicopter and cargo fire on the ground and while airborne;
- (iv) engine fire and failure;
- (v) effects of engine icing and anti-ice operation;
- (vi) take-off, landing and flight with the critical engine inoperative and engine inoperative performance capabilities;
- (vii) flight control failures and abnormalities;
- (viii) hydraulic, electrical and other system failures;
- (ix) failure of navigation and communication equipment;
- (x) pilot incapacitation - recognition and response during various phases of flight;
- (xi) steep turns (45 degrees of bank), and other flight characteristics such as unusual attitudes (as applicable for initial and upgrade only);
- (xii) helicopter performance for climb, cruise, holding, descent and landing;
- (xiii) normal and performance limited take-offs;
- (xiv) take-off and landing data calculations;
- (xv) rejected take-off procedures;
- (xvi) passenger and crew evacuation;
- (xvii) FMS, EGPWS, ACAS and specialized equipment (where available);
(amended 2008/12/30)
- (xviii) inadvertent encounters with moderate or severe in-flight icing conditions where the helicopter is certified for flight into known icing conditions (where available); and
(amended 2008/12/30)
- (xix) loss of pressurization and emergency descent (if applicable);
(amended 2008/12/30)

(b) Where the air operator seeks authorization for flight in IMC, the following training in flight planning and instrument flight procedures shall be included:

- (i) departure, enroute, holding and arrival; and
- (ii) all types of instrument approaches and missed approaches in minimum visibility conditions using all levels of automation available (as applicable).

(c) In addition to the training in an approved Level A or B FFS Training Program, the following flight training on the helicopter type shall be carried out:

(amended 2008/12/30)

- (i) interior and exterior preflight checks;
- (ii) ground handling;
- (iii) hover, normal take-off, visual circuit (where possible) and landing;
- (iv) a simulated engine inoperative approach and landing;
- (v) simulated engine failure procedures during take-off and missed approach (at a safe altitude and airspeed);

(vi) no electronic glide slope approach and landing; and

(amended 2008/12/30)

(vii) approaches where the simulator lacks the capability

(amended 2008/12/30)

(d) If a Level A or better FFS has differences in performance, systems, or cockpit layout and configuration from the air operator's helicopter, additional training on these differences shall be provided.

(amended 2008/12/30)

(8.1) Level C Training Program (if applicable)

(amended 2008/12/30)

(a) For the purpose of this provision, "similar helicopter" means helicopters listed in the Schedule to this subsection.

(b) An air operator with an approved Level C training program using a Level C, or better, FFS approved in accordance with the *Aeroplane and Rotorcraft Simulator Manual* is permitted zero flight time training for candidates on initial training who have experience on a similar helicopter with the same operator or who have verifiable currency on a similar helicopter within the previous two years. Candidates who do not qualify shall undergo helicopter flight training in accordance with those items listed in paragraph 723.98(8)(c) above.

(c) In addition to those items of training required in paragraphs 723.98(8)(a) and (b), the training in an approved Level C, or better, FFS shall include:

(i) manoeuvring of the helicopter on the ground

(ii) crosswind take-offs and landings to 100% of the published crosswind component, and

(iii) a visual training program in the flight simulator to ensure VFR flight skills, covering scenarios of dusk and night with variable weather and visibilities. This program shall include:

(A) normal and crosswind take-offs, visual circuits and landings with variable wind, runway illusion and surface conditions;

(B) engine inoperative approach and landing;

(C) engine failure procedures during take-off and missed approach;

(D) no electronic glide slope approach and landing; and

(E) approaches and landings with flight control failures and abnormalities;

(d) If a Level C, or better, FFS has differences in performance, systems, or cockpit layout and configuration from the air operator's helicopter, additional training on these differences shall be provided.

SCHEDULE - Full Flight Simulator Grouping – Helicopters

(a) The following helicopters are “similar helicopters” for the purpose of FFS Grouping:

- (i) Agusta 109 and 119, all model series;
- (ii) Bell 47, all model series (including Bell 47T);
- (iii) Bell 206, all model series (including 206 LT);
- (iv) Bell 222, 230 and 430, all model series;
- (v) Bell 204, 205, 210 and 212, all model series;
- (vi) Bell 212 and 412, all model series;
- (vii) Enstrom F28, 280 and 480, all model series;
- (viii) Eurocopter AS 350, AS 355 and EC 130, all model series;
- (ix) Eurocopter SA 330, AS 332 and EC 225, all model series;
- (x) Eurocopter SE 313/3130, SE 316/3160 and SA 313 thru 319 (Alouette II / Lama / Alouette III), all model series;
- (xi) Eurocopter SA 360, SA/AS 365 and EC 155, all model series;
- (xii) Eurocopter BK 117 and EC 145, all model series;
- (xiii) Eurocopter BO 105, all model series;
- (xiv) Hiller 12E and 12ET, all model series;
- (xv) Hughes/Schweizer Models 269, 300, 330 and 333, all model series;
- (xvi) McDonnell Douglas/Hughes 500(369), 520, 530 and 600, all model series;
- (xvii) McDonnell Douglas MD 900, 901 and 902 Explorer, all model series;
- (xviii) Sikorsky S 55 and S 55T, all model series;
- (xix) Sikorsky S 58 and S 58T, all model series;
- (xx) Sikorsky S 61 and S 62, all model series;
- (xxi) Sikorsky S 70, all model series, and
- (xxii) Sikorsky S 76, all model series;

(b) Any type of helicopter not shown in paragraph (a) above has not been considered for similar grouping and should be treated separately.

(8.2) Level D Training Program (if applicable)

(amended 2008/12/30)

(a) An air operator with an approved Level D training program using a Level D FFS approved in accordance with the *Aeroplane and Rotorcraft Simulator Manual* is permitted zero flight time training.

(b) In addition to the training required for a Level C program, a VFR training program in the Level D FFS of at least 4 hours per crew (2 hours as pilot flying and 2 hours as pilot not flying) is required to ensure visual flight skills to cover either day or dusk and night with variable weather and visibility scenarios. This program shall include the following:

- (i) normal and crosswind take-offs, and visual circuits and landings, with variable wind, runway illusion and surface conditions;
- (ii) engine inoperative approach and landing;
- (iii) engine failure procedures during take-off and missed approach;
- (iv) no visual aids approaches and landings, and
- (v) approaches and landings with flight control failures and abnormalities.

Information Note:

Where a pilot demonstrates a satisfactory level of performance in visual manoeuvres, the air operator may use the time specified in subparagraph 723.98(8.2)(b)(i) as additional training to that required by any of the Level C requirements.

(c) If a Level D FFS has differences in performance, systems, or cockpit layout and configuration from the air operator's helicopter, additional training on these differences shall be provided.

(9) Reserved

(amended 2008/12/30)

(10) Helicopter Only Flight Training Program

Any simulated failures of helicopter systems shall only take place under operating conditions which do not jeopardize safety of flight.

(a) Standard Operating Procedures for normal, abnormal and emergency operation of the helicopter systems and components, including:

- (i) use of checklists, including interior and exterior pre-flight checks;
- (ii) manoeuvring of the helicopter on the ground (if applicable);
- (iii) aspects of crew co-operation;
- (iv) hover, normal take-off, visual circuit, approach and landing;

- (v) simulated helicopter and cargo fire on the ground and while airborne;
- (vi) simulated engine fire and failure;
- (vii) briefings on the effects of airframe and engine icing and anti-ice operation;
- (viii) take-off, landing and flight with the critical engine simulated inoperative, and engine inoperative performance capabilities;
- (ix) simulated hydraulic, electrical and other system failures;
- (x) simulated flight control failures and degraded states of operation, while in flight and during take-off and landing (as applicable);
- (xi) simulated failure of navigation and communication equipment;
- (xii) simulated pilot incapacitation - recognition and response;
- (xiii) steep turns (45 degrees of bank) and other flight characteristics (as applicable for initial and upgrade only);
- (xiv) helicopter performance;
- (xv) rejected take-off procedures;
- (xvi) briefing on crew and passenger evacuation procedures; and
- (xvii) specialized equipment (where applicable).

(b) Flight planning and instrument flight procedures, where the air operator is authorized for VFR flight at night or flight in IMC:

- (i) departure, enroute, holding and arrival; and
- (ii) all types of instrument approaches and missed approaches in simulated minimum visibility conditions using all levels of automation available, (as applicable).

(11) Emergency Procedures Training for Pilots

This training is required on an annual basis and shall include instruction in the location and operation of all emergency equipment. Training devices approved to simulate flight operating emergency conditions, static helicopters, ground demonstrations, classroom lectures, films or other devices may be used for training provided the method used ensures that each flight crew member is adequately trained in the operation or use of all emergency equipment. Where practical training is required, it shall be completed on initial training and every three years thereafter.

- (a) fire in the air and on the ground;
- (b) use of fire extinguishers, including practical training;
- (c) operation and use of emergency exits, including practical training;

- (d) passenger preparation for an emergency landing or ditching, (as applicable) including practical training;
- (e) emergency evacuation procedures, including practical training;
- (f) donning and inflation of life preservers (when equipped), including practical training;
- (g) removal from stowage, deployment, inflation and boarding of life rafts/slide rafts (when equipped), including practical training;
- (h) pilot incapacitation, including practical training;
- (i) hijacking, bomb threats and other security procedures;
- (j) passenger on board medical emergency; and
- (k) special emergency procedures where the helicopter is used on MEDEVAC operations, including patient evacuation in emergency situations.

(12) Regaining Qualifications Training

For operators using a Level B, C, or D FFS, approved in accordance with the *Aeroplane and Rotorcraft Simulator Manual*, or the helicopter, the following must be completed for all pilots who have not maintained their recency qualifications in accordance with paragraph 703.88(1)(b) of the *Canadian Aviation Regulations* for a period between 90 and 180 days.

- (a) a briefing on changes that have occurred to the helicopter or its operation since the last flight; and
- (b) three take-offs and landings (which may be carried out as part of a PPC where one has come due).

(13) Flight Follower Training

Persons assigned the duties of the flight follower shall receive training in at least the following:

- (a) company indoctrination;
- (b) duties and responsibilities;
- (c) communication procedures;
- (d) applicable regulations and standards;
- (e) flight preparation procedures as applicable to assigned duties;
- (f) procedures in the event of an emergency or overdue aircraft;

- (g) accident and incident reporting procedures; and
- (h) requirements of the approved *Company Operations Manual* as applicable to the duties and responsibilities.

(14) Helicopter Surface Contamination Training

An approved surface contamination initial and recurrent training program is required for all operations personnel to ensure they are aware of hazards and procedures for ice, frost and snow critical contamination on helicopters. The training program shall include:

- (a) responsibility of the pilot-in-command and other operations personnel;
- (b) regulations related to operations in icing conditions;
- (c) weather conducive to ice, frost and snow contamination;
- (d) inspection before flight and removal of contamination;
- (e) in-flight icing recognition; and
- (f) hazards related to critical-surface contamination by ice, frost and snow.

(15) Minimum Equipment List (MEL) Training

When a Minimum Equipment List (MEL) has been approved for use on a helicopter type, the air operator shall provide the following training to flight crew members, maintenance personnel, and to persons exercising operational control as applicable:

(amended 2004/12/01)

- (a) training for maintenance personnel shall include instruction on those sections of the Maintenance Control Manual which address the MEL, placarding of inoperative equipment, maintenance release, and any other MEL related procedures;

(amended 2004/12/01)

- (b) training for flight crew members and operational control personnel shall include instruction on the purpose and use of an MEL, air operator MEL procedures, elementary work as applicable and the responsibility of the pilot-in-command;

(amended 2004/12/01)

- (c) recurrent training shall be conducted when required to ensure air operator personnel are aware of any changes to the MEL or MEL procedures.

(16) Transportation of Dangerous Goods

All training required by the Transportation of Dangerous Goods Regulations.

(17) Lower than Standard Take-off Weather Minima (RVR 600 feet)

Authority to conduct 600 RVR take-offs shall be subject to approval of a training program using an approved synthetic training device for the type of helicopter to be used and capable of depicting RVR 600' take-off conditions. Training is required for the pilot-in-command only unless the air operator authorizes the second-in-command to conduct 600 feet RVR take-offs in which case the second-in-command shall complete the same training.

The training program shall include:

- (a) take-off alternate requirements;
- (b) one engine inoperative performance requirements;
- (c) responsibility for obstacle clearance and visibility requirements;
- (d) take-off runway requirements;
- (e) helicopter equipment requirements;
- (f) pilot qualification requirements; and
- (g) training in the synthetic training device shall include normal take-offs under RVR 600 feet conditions and rejected take-offs under RVR 600 feet conditions, including engine failures and system malfunctions.

(18) Lower than Standard Decision Height**Category 1 Instrument Landing system Approach Minima****Reported Visibility RVR 1200 feet - Decision Height 100 feet**

Authority to conduct approaches to 100 feet DH with 1200 RVR is subject to approval of a training program using an approved synthetic training device for the helicopter type to be used. The training device shall be capable of depicting IMC to 100 feet DH.

The training program shall include:

- (a) capabilities and limitations of the ILS and visual aids;
- (b) operational characteristics and limitations of the airborne system to be used such as the flight director, automatic approach coupler and systems and devices peculiar to the applicant's installation, such as missed approach guidance and failure warning systems;
- (c) individual crew duties, including approach briefing, two-pilot challenge and response communication rule, pilot incapacitation procedures and pilot-monitored approach procedure with emphasis on the need to continually monitor flight instruments until the attitude and descent path have been visually assessed; and

(d) training in the synthetic training device shall include the effects of wind shear and turbulence, recognition and reaction to malfunctions encountered prior to and after reaching the missed approach point, ILS approaches to landings from 100/1200 feet RVR conditions and missed approaches during which practical malfunctions and emergencies are introduced.

(19) Area Navigation Systems (RNAV)

(a) General Training

(amended 2003/03/01)

(i) To qualify for the use of RNAV systems on IFR operations, an air operator shall have an approved flight crew training and qualifications program for use of the system. Flight crew shall have completed the appropriate training and have completed an in-flight check or an equivalent check in an approved synthetic training device. This qualification check shall be conducted by a Transport Canada inspector or an authorized air operator check pilot.

(ii) Training shall be in the following areas:

(A) pre-flight;

(B) normal operation of the system;

(C) procedures for manually updating the system;

(D) methods of monitoring and cross checking the system;

(E) action in the event of discrepancy between systems and method of determining which is the most accurate or reliable system;

(F) the procedure for regaining track after deliberate or accidental deviation from the cleared track;

(G) Standard Instrument Departure (SID), Standard Terminal Arrival Route (STAR), and terminal procedures (if applicable);

(H) operation in areas of compass unreliability;

(I) malfunction procedures, including re-synchronization (if applicable);

(J) terminal procedures;

(K) waypoint symbology, plotting procedures and record keeping duties/practices;
and

(L) post-flight.

(b) Ground Training - Non-Integrated Receivers (Panel Mount GPS Receivers)
(amended 2003/03/01)

An air operator shall ensure that the training program candidates are trained to proficiency in each of the elements associated with the following areas:

(i) Knowledge with respect to the following:

(A) the GPS system, including:

(I) GPS system components and aircraft equipment;

(II) the composition of satellite constellation;

(III) the minimum number of satellites required for 2-D and 3-D navigation;

(IV) the basic concept of satellite ranging;

(V) factors affecting the accuracy of GPS signals; and

(VI) the World Geodetic Survey 84 (WGS 84) datum and the effect of using any other datum;

(B) human factors applicable to the use of GPS and how errors may be reduced or eliminated;

(C) company standard operating procedures for using GPS units; and

(D) procedures for reporting GPS problems and database errors.

(ii) Ability to perform the following operational tasks:

(A) select appropriate operational modes;

(B) recall categories of information contained in the database;

(C) predict RAIM availability;

(D) enter and verify user defined waypoints;

(E) recall and verify database waypoints;

(F) interpret typical GPS navigational displays including latitude/longitude, distance and bearing to waypoint, course deviation indication (CDI), desired track (DTK), track made good (TMG), actual track (TK), cross track error and any other information appropriate for the equipment used;

(G) intercept and maintain GPS defined tracks;

(H) determine navigation information appropriate for the conduct of the flight including ground speed (GS), estimated time of arrival (ETA) for next waypoint and destination;

(I) recognition of waypoint passage;

- (J) use of 'direct to' function;
 - (K) link enroute portion of GPS flight plan to approach;
 - (L) conduct SIDs, STARs, terminal area procedures and holds;
 - (M) retrieve, verify and conduct GPS stand alone approaches; and
 - (N) conduct GPS missed approaches.
- (iii) Ability to conduct the following operational and serviceability checks:
- (A) database currency and area of operation;
 - (B) receiver serviceability;
 - (C) RAIM status;
 - (D) CDI sensitivity;
 - (E) position indication; and
 - (F) number of satellites acquired and, if available, satellite position information.
- (iv) Ability to recognize and take appropriate action for all GPS warnings and messages including, where applicable:
- (A) "loss of RAIM";
 - (B) "2D navigation";
 - (C) "In Dead Reckoning Mode";
 - (D) "database out of date";
 - (E) "GPS fail";
 - (F) "barometric input fail";
 - (G) "power/battery low" or "fail";
 - (H) "parallel offset on"; and
 - (I) "satellite fail".

(c) Ground Training - Integrated Receivers (Flight Management Systems)
(amended 2003/03/01)

An air operator shall ensure that the training program candidates are trained to proficiency in each of the elements associated with the following areas:

- (i) Knowledge with respect to the following:
 - (A) the GPS system and theory of operation, including:
 - (I) GPS system components and aircraft equipment;

- (II) the composition of satellite constellation;
- (III) the minimum number of satellites required for 2-D and 3-D navigation;
- (IV) the basic concept of satellite ranging;
- (V) factors affecting the accuracy of GPS signals; and
- (VI) the WGS84 datum and the effect of using any other datum; and
- (B) human factors applicable to the use of GPS and how errors may be reduced or eliminated (i.e. maintaining situational awareness);
- (ii) Ability to perform the following operational tasks:
 - (A) predict RAIM availability;
 - (B) link enroute portion of GPS flight plan to approach;
 - (C) conduct GPS stand alone approaches; and
 - (D) conduct GPS missed approaches;
- (iii) Ability to conduct the following operational and serviceability checks:
 - (A) RAIM status;
 - (B) CDI sensitivity; and
 - (C) number of satellites acquired and, if available, satellite position information;
- (iv) Ability to recognize and take appropriate action for all GPS warnings and messages including, where applicable:
 - (A) "loss of RAIM";
 - (B) "2D navigation";
 - (C) "GPS fail";
 - (D) "barometric input fail"; and
 - (E) "satellite fail".

(d) Flight Training

(amended 2003/03/01)

- (i) Pilots shall complete flight training in the use of GPS for approach and other associated duties for each crew position they are authorized to occupy. Flight training may be completed in an aircraft, or in a level A or higher simulator that is equipped with the same model of GPS receiver (or a model determined by the Minister to be sufficiently similar) that is installed in the company aircraft.

(ii) Flight training shall be conducted by a designated training pilot who has completed the company ground training program approved by the Minister, and demonstrated proficiency in the use of the model of GPS (or a model determined by the Minister to be sufficiently similar), to an approved check pilot.

(iii) The following initial flight training and checking, and currency requirements apply to aircraft operated under Subpart 703 of the *Canadian Aviation Regulations* conducting single-pilot IFR GPS approaches where persons other than flight crew are carried. Before a pilot is assigned as the pilot-in-command (PIC) of a single-pilot IFR operation using GPS for an instrument approach, the following requirements shall be met:

(A) within the preceding ninety days, and while under the direct supervision of a designated training pilot, the pilot shall conduct a minimum of ten (10) GPS approaches of which:

(I) five (5) approaches are conducted in actual or simulated instrument meteorological conditions (IMC) to the prescribed landing minima,

(II) three (3) approaches, including a published missed approach, at least two of which are conducted in actual or simulated IMC, and

(III) two (2) approaches are conducted using different initial approach waypoints (IAWPs);

(B) completion of all of the requirements listed in clause (A) shall be recorded in the pilot's training file together with the following information:

(I) registration and type of the aircraft, or type of simulator, used for the GPS approaches;

(II) manufacturer and model number of GPS equipment used;

(III) date, name and number of approaches conducted in total, in IMC, with missed approaches and from which IAWP; and

(IV) certification by the designated training pilot attesting to the training given to the pilot;

(C) the pilot shall successfully demonstrate his/her proficiency in GPS operations as part of a PPC or as a separate check ride conducted by an approved company check pilot or a Transport Canada Inspector and shall be certified as proficient; and

(D) currency requirements shall be demonstrated by conducting GPS instrument approaches during the PPC.

(20) Transportability of Pilot Proficiency Check

Transportability of Pilot Proficiency Checks from one air operator to another is permitted subject to the hiring air operator providing the following training, which shall be specified in the approved operations/training manual:

- (a) company indoctrination;
- (b) pilot ground and emergency procedures training on each type of helicopter the pilot is assigned, sufficient to cover the air operator procedures and equipment differences;
- (c) standard operating procedures review; and
- (d) the hiring air operator records the PPC validity and expiration date in company records.

(21) Survival Equipment Training

Training for all crew members shall include the following:

- (a) survival concepts;
- (b) contents of the survival equipment kit; and
- (c) how to use the survival equipment carried on board as appropriate for the operation.

(22) Aircraft Servicing and Ground Handling Training for Pilots

- (a) Fuelling procedures:
 - (i) types of fuel, oil and fluids used in the helicopter;
 - (ii) correct fuelling procedures; and
 - (iii) procedures for checking fuel, oil and fluids and the proper securing of caps.
- (b) use of tow bars;
- (c) installation of protective covers on the helicopter; and
- (d) procedures for operating in cold weather, such as:
 - (i) moving the helicopter out of a warm hangar when precipitation is present;
 - (ii) procedures for applying de-icing and anti-icing fluids for the helicopter type including critical flight controls post application inspections; and
 - (iii) engine and cabin pre-heating procedures, including proper use of related equipment.

(23) Persons Assigned on Board Duties

Where an air operator has assigned on-board duties to a non-flight crew member, that person shall be given adequate initial and annual training to perform the procedures relevant to the duties with which the person is to be involved including, as applicable:

- (a) the authority of the pilot-in-command;
- (b) means of communication;
- (c) a general description of the helicopter in which the person is to serve and the proper use of cabin installed systems controls;
- (d) procedures for the handling of normal, abnormal, and emergency situations including:
 - (i) safe movement in the vicinity of the helicopter and safe movement to and from the helicopter;
 - (ii) briefing of passengers;
 - (iii) handling of passengers;
 - (iv) securing of the cabin;
 - (v) location, operation and use of emergency, life-saving and survival equipment carried, including practical training;
 - (vi) fire fighting, including practical training;
 - (vii) location, operation and use of emergency exits, including practical training;
 - (viii) passenger preparation for an emergency landing or ditching, including practical training; and
 - (ix) evacuation, including practical training; and
- (e) knowledge of the relationship of the procedures with respect to those of the other crew members.

(24) Controlled Flight into Terrain (CFIT) Avoidance Training

Air operators shall provide the following initial and biennial CFIT avoidance training to all flight crew members operating helicopters approved for flight under instrument meteorological conditions:

(amended 2000/06/01)

- (a) factors that may lead to CFIT accidents and incidents;
- (b) CFIT prevention strategies; and
- (c) methods of improving situational awareness.

DIVISION IX - MANUALS**723.105 *Contents of a Company Operations Manual***

(1) For air operators conducting IFR and VFR at night operations, the manual shall contain as applicable to the operations:

- (a) a preamble related to the use and authority of the manual;
- (b) a table of contents;
- (c) the amendment procedure;
- (d) a list of effective pages;
- (e) a copy of the Air Operator Certificate and operations specifications;
- (f) a chart of the company management organization;
- (g) duties, responsibilities and succession of command of management and operations personnel;
- (h) a description of the operational control system including:
 - (i) flight authorization and flight preparation procedures;
 - (ii) flight watch and communications requirements;
 - (iii) flight following requirements;
 - (iv) dissemination procedures for operational information and acknowledgement;
 - (v) fuel requirements;
 - (vi) weight and balance system;
 - (vii) preparation and retention of flight documents;
 - (viii) accident/incident reporting procedures and procedures for reporting overdue helicopters;
 - (ix) use of check lists; and
 - (x) maintenance discrepancy reporting and requirements on completion of flights;
- (i) a sample of the operational flight plan, weight and balance form and retention period;
- (j) CVR procedures;
- (k) operating weather minima and applicable requirements for IFR, VFR, VFR at night and VFR over-the-top, including alternate aerodrome requirements;
- (l) instrument and equipment requirements;

- (m) instrument approach procedures;
 - (n) procedures for establishing company routes in uncontrolled airspace;
 - (o) procedures for the use of area navigation (RNAV);
 - (p) operations in hazardous conditions such as icing, thunderstorms and white-out;
 - (q) operations in high density altitude conditions, related to take-off and landing weight limitations;
 - (r) the securing of cargo;
 - (s) passenger briefing procedures;
 - (t) the use of the *Rotorcraft Flight Manual*, and Standard Operating Procedures, as applicable;
 - (u) helicopter ice, frost and snow critical-surface contamination procedures;
 - (v) procedures for the carriage of dangerous goods;
 - (w) fuelling procedures, including:
 - (i) fuel contamination precautions;
 - (ii) bonding requirements;
 - (iii) fuelling with engine running; and
 - (iv) fuelling with passengers on board;
 - (x) a list of the emergency survival equipment carried on helicopters, how to use the equipment and periodic equipment inspection requirements;
 - (y) emergency procedures for:
 - (i) the emergency locator transmitter;
 - (ii) passenger preparation for emergency landing/ditching; and
 - (iii) emergency evacuation;
 - (z) crew member qualifications;
 - (a-a) flight/duty time limitations and rest requirements;
 - (b-b) training programs, including a copy of the company training and qualification record form(s); and
 - (c-c) for dedicated or contracted MEDEVAC operations, operational procedures. These shall include procedures which will ensure, to the maximum extent possible, that decisions affecting safety of flight are not influenced by the condition of the patient.
- (amended 2003/06/01)

(2) For air operators conducting day VFR operations only, the manual shall contain items (a) through (h) from subsection (1) and;

- (i) operating weather minima and requirements for VFR and VFR over-the-top;
- (j) operations in hazardous conditions such as icing, thunderstorms and white-out;
- (k) operations in high density altitude conditions as applicable;
- (l) the securing of cargo;
- (m) the use of the *Rotorcraft Flight Manual*, Aircraft Operating Manual and Standard Operating Procedures as applicable;
- (n) helicopter ice, frost and snow critical-surface contamination procedures;
- (o) procedures for the carriage of dangerous goods;
- (p) fuelling procedures, including:
 - (i) fuel contamination precautions;
 - (ii) bonding requirements;
 - (iii) fuelling with passengers on board; and
 - (iv) fuelling with engine running;
- (q) a list of the emergency survival equipment carried on helicopters, how to use the equipment, and periodic equipment inspection requirements;
- (r) emergency procedures for:
 - (i) the E.L.T.
 - (ii) passenger preparation for emergency landing/ditching; and
 - (iii) emergency evacuation;
- (s) crew member qualifications;
- (t) flight and duty time limitations and rest requirements; and
- (u) training programs, including a copy of the company training and qualification record form(s).

(3) For an owner/pilot operating one aircraft and not employing other pilots, the manual shall contain:

- (a) a table of contents;
- (b) the amendment procedure;
- (c) a list of effective pages;
- (d) a copy of the air operator certificate and operations specifications;

- (e) the weight and balance system;
- (f) a list of the emergency survival equipment carried on helicopters;
- (g) the training program, including a copy of the company training and qualification record form;
- (h) the procedure for reporting overdue helicopters;
- (i) procedures for reduced VFR limits in uncontrolled airspace (if applicable);
- (j) accident/incident reporting; and
- (k) procedures for the carriage of dangerous goods.

723.107 *Standard Operating Procedures*

The Standard Operating Procedures shall contain the following information for each type of two-pilot helicopter operated. Where there are significant differences in equipment and procedures between helicopters of the same type operated, the Standard Operating Procedures shall show the registration mark of the helicopter it is applicable to.

Required information, if contained in another publication carried on board the helicopter during flight, need not be repeated in the SOP.

The SOP may form part of the *Company Operations Manual*.

The SOP shall contain the following as applicable to the operation:

(1) General

- (a) a table of contents;
- (b) a list of effective pages;
- (c) the amending procedure;
- (d) a preamble;
- (e) communications;
- (f) crew coordination;
- (g) the use of check lists;
- (h) standard briefings; and
- (i) standard calls.

(2) Normal Procedures

- (a)* weight and balance control requirements;
- (b)* ramp;
- (c)* battery/AMU engine starts;
- (d)* taxi;
- (e)* take-off and climb;
- (f)* cruise;
- (g)* descent;
- (h)* approaches:
IFR, visual, VFR, and circling;
- (i)* landing;
- (j)* missed approach and balked landing procedures;
- (k)* refuelling with passengers on board;
- (l)* use of on-board navigation and alerting aids; and
- (m)* check lists.

(3) Abnormal and Emergency Procedures

- (a)* emergency landings/ditching - with time to prepare and without time to prepare;
- (b)* pilot incapacitation and two communication rule, (two-pilot crew);
- (c)* bomb threats and hijacking;
- (d)* engine fire/failure/shutdown;
- (e)* fire:
internal/external;
- (f)* smoke removal;
- (g)* rejected take-off; and
- (h)* other abnormal and emergency procedures that are specific to the type of helicopter.



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CANADIAN AVIATION REGULATIONS

PART VII - COMMERCIAL AIR SERVICES

***STANDARD 724 - COMMUTER OPERATIONS -
AEROPLANES***

Canada

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NOTE

All amendments to the CARs will be indicated by the Coming into Force date, immediately following the amended text.

RECORD OF AMENDMENTS

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STANDARD 724 - COMMUTER OPERATIONS - AEROPLANES

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Foreword

These Commercial Air Services Standards outline the requirements for complying with the *Commuter Operations Regulations* Subpart 704 of the *Canadian Aviation Regulations*

For ease of cross reference, the divisions and numbers of the standard are assigned to correspond to the regulations, therefore Standard 724.05 would reflect a standard required by Section 704.05 of the Regulations.

PART VII - COMMERCIAL AIR SERVICES

STANDARD 724 - COMMUTER OPERATIONS - AEROPLANES

DIVISION I - GENERAL

The standards under this Subpart apply to every Canadian air operator engaged in commercial air services under Subpart 704 of the *Canadian Aviation Regulations*.

Definitions

The words and expressions used in these Standards have the same meaning as in the General Provisions Part I of the *Canadian Aviation Regulations* with the following additions:

- “deplane” - means disembark; an aeroplane is deplaned when the passengers leave the aeroplane in the normal manner, as opposed to evacuating the aeroplane. (*débarquement*)
- “designated evacuation exits during fuelling” - means exits that are available for immediate use should an evacuation be required. (*issues désignées pour l'évacuation pendant l'avitaillement en carburant*)
- “evacuate” - means the egress from an aeroplane in an emergency situation using all available emergency exits and assist means such as ropes, wings, emergency evacuation slides, etc. (*évacuation*)
- “fuelling” - means the act of transferring fuel into or out of an aeroplane fuel tank from or to an external supply. (*avitaillement en carburant*)
- “operations co-ordination” - means the exercise of authority by an air operator over its operating activities, excluding operational control. (*coordination des opérations*)
- “on demand” - means an air transport service where the date, time and place(s) of departure and arrival are negotiated directly between a client and the air operator. (*à la demande*)
- “take-off safety speed” - is the lowest speed at which the aeroplane complies with those handling criteria associated with the climb after take-off following an engine failure. (*vitesse de sécurité au décollage*)

DIVISION II - CERTIFICATION**724.07 Issuance or Amendment of Air Operator Certificate****(1) Application for an Air Operator Certificate**

The following constitutes an application for an Air Operator Certificate:

- (a) form 26-0045 Airports - information required to determine the suitability of the base of operations, any sub-bases and all scheduled points. The operator shall be able to demonstrate that operations are permitted at each base, sub-base or scheduled point. This will normally be done by providing written permission from the Local Airport Authority (LAA). Where the air operator cannot obtain written permission and operations have not been denied in writing by the LAA, access to the aerodrome shall be demonstrated by other means; such as facilities provided through a lease, contractual agreement, etc.;
- (b) form 26-0046 Aircraft - information with respect to each aeroplane by registration;
- (c) form 26-0047 Personnel - information on required personnel. These shall be supported by resumes and statements of qualification for each position;
- (d) form 26-0048 - Maintenance Facilities;
- (e) Maintenance Control Procedures;
- (f) *Company Operations Manual*;
- (g) Standard Operating Procedures;
- (h) Minimum Equipment List(s) (if applicable);
- (i) nomination for Company Check Pilot (if applicable);
- (j) form 26-0448 - Cabin Safety (if applicable); and
- (k) aeroplane crash charts (if the type has not previously been operated in Canada).

(2) Qualifications and Responsibilities of Operational Personnel**(a) Operations Manager****(i) Qualifications**

- (A) Hold or have held the appropriate licence and ratings for which a pilot-in-command is required to hold for one of the aeroplanes operated; or have acquired not less than 3 years related supervisory experience with an operator of a Commercial Air Service whose flight operations are similar in size and scope; and
- (B) Demonstrate knowledge to the Minister with respect to the content of the operations manual, the air operator's certificate and operations specifications, the

provision of the regulations and the standards necessary to carry out the duties and responsibilities to ensure safety.

(ii) Responsibilities

The Operations Manager is responsible for safe flight operations. In particular, the responsibilities of the position include:

- (A) control of operations and operational standards of all aeroplanes operated;
- (B) the identification of operations coordination functions which impact on operational control (eg. maintenance, crew scheduling, load control, equipment scheduling);
- (C) supervision, organization, function and manning of the following:
 - (I) flight operations;
 - (II) cabin safety;
 - (III) crew scheduling and rostering;
 - (IV) training programs; and
 - (V) flight safety;
- (D) the contents of the air operator's *Company Operations Manual*;
- (E) the supervision of and the production and amendment of the *Company Operations Manual*;
- (F) liaison with the regulatory authority on all matters concerning flight operations, including any variations to the Air Operator Certificate;
- (G) liaison with any external agencies which may affect air operator operations;
- (H) ensuring that the air operator's operations are conducted in accordance with current regulations, standards and air operator policy;
- (I) ensuring that crew scheduling complies with flight and duty time regulations, and that all crew members are kept informed of any changes to the regulations and standards;
- (J) the receipt and actioning of any aeronautical information affecting the safety of flight;
- (K) the dissemination of aeroplane safety information, both internal and external;
- (L) qualifications of flight crew; and
- (M) maintenance of a current operations library.

NOTE:

In his or her absence all responsibilities for operational duties shall be delegated to another individual qualified in accordance with the Canadian Aviation Regulations except that the knowledge requirements detailed under Operations Manager qualifications may be demonstrated to the air operator rather than the Minister.

(b) Chief Pilots**(i) Qualifications**

The chief pilot shall have the following qualifications:

(amended 2003/06/01)

(A) if the Air Operator Certificate authorizes VFR only - hold a valid Airline Transport Pilot Licence-Aeroplane or a valid Commercial Pilot Licence -Aeroplane appropriate for an aeroplane subject to this Subpart;
(amended 2003/06/01)

(B) if the Air Operator Certificate authorizes Day and Night VFR - hold an Airline Transport Pilot Licence-Aeroplane or Commercial Pilot Licence-Aeroplane, valid for night, and a valid Instrument Rating appropriate for an aeroplane subject to this Subpart;
(amended 2003/06/01)

(C) if the Air Operator Certificate authorizes IFR - hold a valid Airline Transport Pilot Licence-Aeroplane and a valid Instrument Rating for an aeroplane subject to this Subpart;
(amended 2003/06/01)

(D) if applicable, hold a type rating for at least one of the types of aeroplanes operated;

(E) have at least 3 years experience as pilot-in-command of a commuter aeroplane (as defined in section 704.01 of the *Canadian Aviation Regulations*);

(F) be qualified in accordance with the air operator's training program to act as a pilot-in-command on one of the types to be operated;

(G) demonstrate knowledge to the Minister with respect to the content of the *Company Operations Manual*, Training Manuals, Standard Operating Procedures (if applicable), *Company Check Pilot Manual* (if applicable), and the provisions of the Regulations and Standards necessary to carry out the duties and responsibilities of the position; and

(H) the chief pilot's personal record in relation to aviation shall not include:
(amended 2003/06/01)

(I) any conviction under subsection 7.3(1) of the *Aeronautics Act*; or

(II) two or more convictions, occurring during separate unrelated events, under the *Canadian Aviation Regulations*.

NOTE:

A Chief Pilot qualified under Subpart 705 of the Canadian Aviation Regulations may serve as the Chief Pilot for Subpart 704 of the Canadian Aviation Regulations operations within the same company.

(ii) Responsibilities

The Chief Pilots are responsible for the professional standards of the flight crews under their authority, and in particular:

(A) developing standard operating procedures;

(B) developing or implementing all required approved training programs for the air operator flight crews;

(C) issuing directives and notices to the flight crews as required;

(D) the operational suitability and requirements of all aerodromes and routes served by the air operator;

(E) the actioning and distribution of accident, incident, and other occurrence reports;

(F) the processing and actioning of any flight crew reports;

(G) the supervision of flight crews; and

(H) assuming any responsibilities delegated by the Operations Manager.

NOTE:

In his or her absence, all responsibilities for duties shall be delegated to another individual qualified in accordance with the Canadian Aviation Regulations except that the knowledge requirements detailed under chief pilot qualifications may be demonstrated to the air operator rather than the Minister.

(c) Person Responsible for Maintenance

The person responsible for the maintenance control system shall be qualified in accordance with section 726.03 of the *Commercial Air Services Standards*.

(3) Operational Support Services and Equipment

The requirement for operational support services and equipment will be dependent on types of aeroplanes and the size and scope of the operation and shall include the following, as applicable:

- (a) operational control system requirements;
- (b) current flight operations publications including a copy of the *Aeronautics Act*, applicable *Canadian Aviation Regulations*, *Company Operations Manual*, *Maintenance Control Manual/Maintenance Procedures Manual* (as applicable), *Canada Flight Supplement*, *Water Aerodrome Supplement*, *Airplane Flight Manuals*, *Aircraft Operating Manuals* (if applicable), *Standard Operating Procedures*, *Aeronautical Information Publication*, *Minimum Equipment Lists* and appropriate maps and charts;
- (c) passenger and cargo handling requirements;
- (d) communications requirements;
- (e) provisions for handling dangerous goods (if applicable);
- (f) weather availability requirements;
- (g) ground de-icing/ anti-icing program requirements; and
- (h) aeroplane servicing facilities and ground handling equipment.

724.08 Contents of Air Operator Certificate

(amended 1998/09/01)

(1) Minimum Performance Capability for Long Range Area Navigation System

To meet the requirements of this standard, a long range area navigation system shall, as a minimum:

- (a) have a standard deviation of lateral track deviations of less than 6.3 nautical miles;
- (b) have a proportion of the total flight time spent by the aircraft 30 nautical miles or more from cleared track of less than 5.3×10^{-4} ;
- (c) have a proportion of the total flight time spent by aircraft at or between 50 and 70 nautical miles from the cleared track of less than 1.3×10^{-4} ; and
- (d) in paragraphs 724.08(2)(c) and (d) below, if a GPS receiver(s) provides the only means of long range navigation, then the requirements of FAA Document No. 8110.60, *GPS as a Primary Means of Navigation in Oceanic/Remote Operations* must be met.

(2) Authorizations

(a) Required Navigation Performance Capability (RNP) Airspace

The standard requirements for authorization to flight plan published high level fixed RNAV routes in Required Navigation Performance Capability (RNP) airspace, or to be accommodated by Air Traffic Control (ATC) on other routes using RNP separation criteria, are:

- (i) aeroplanes equipped with at least two independent navigation systems, one of which being a long range area navigation system; and
- (ii) flight crew training on operation of the long range area navigation system in accordance with training pursuant to subsection 724.115(22).

(b) Canadian Minimum Navigation Performance Specification (CMNPS) and RNP Airspace

The standard requirements for authorization to operate in Canadian Minimum Navigation Performance Specification (CMNPS) airspace, and to flight plan published high level fixed RNAV routes in Required Navigation Performance Capability (RNP) airspace, and to be accommodated by Air Traffic Control (ATC) on other routes using RNP separation criteria are:

- (i) aeroplanes with navigation equipment as follows:
 - (A) for aeroplanes operating only in domestic airspace on high level airways equipment in accordance with paragraph 605.18(j) of the *Canadian Aviation Regulations*;
 - (B) for aeroplanes operating only in domestic airspace on company approved routes or direct routes that begin and end within reception range of ground based nav aids, at least two independent navigation systems, one of which being a long range area navigation system;
 - (C) for aeroplanes operating in CMNPS airspace other than on high level airways, company approved routes and direct routings that begin and end within the reception range of ground based nav aids, two independent long range navigation systems;
- (ii) flight crew training on operation of the long range area navigation system(s) in accordance with training requirements set out in subsection 724.115(22) of these Standards.

(c) North Atlantic Minimum Navigation Performance Specification (NAT MNPS), CMNPS and RNP-C Airspace

The standard requirements for authorization to operate in North Atlantic Minimum Navigation Performance Specification (NAT MNPS) airspace, CMNPS airspace, to flight plan published high level fixed RNAV routes in Required Navigation Performance Capability (RNP-C) airspace, and to be accommodated by Air Traffic Control (ATC) on other routes using RNP-C separation criteria are:

(i) subject to clauses (A) and (B) aeroplanes shall be equipped with at least two independent long range area navigation systems.

(A) aeroplanes equipped with at least two independent navigation systems, one of which being a long range area navigation system, may be approved for NAT MNPS operations restricted to routes approved for aeroplanes with one long range RNAV system; and

(B) aeroplanes equipped with at least two independent navigation systems based on short range ground transmitters may be approved for NAT MNPS operations restricted to routes approved for aircraft with no long range RNAV capability; and

(ii) flight crew training on operation of long range area navigation systems in accordance with training requirements set out in subsection 724.115 (22) of these Standards.

(d) Reduced Vertical Separation Minima (RVSM) Airspace

(amended 2003/03/01)

The standards for authorization to operate in Reduced Vertical Separation Minima (RVSM) airspace are:

(amended 2003/03/01)

(i) the aircraft shall be certified in accordance with the *ICAO/FAA Document 91-RVSM* and meet the other applicable technical requirements of *ICAO NAT DOC 001*,
(amended 2003/03/01)

(ii) the air operator shall comply with the *ICAO/FAA Document 91-RVSM* and meet the other applicable requirements of *ICAO NAT DOC 001*, and
(amended 2003/03/01)

(iii) the flight crew training shall be in accordance with the requirements of subsection 724.115(36).
(amended 2003/03/01)

(e) Pacific Required Navigation Performance 10 (RNP-10) Airspace
(amended 2002/12/01)

The requirements for authorization to operate in Pacific RNP-10 airspace are as follows:

- (i) the aircraft is equipped with at least two independent long range navigation systems capable of meeting a position accuracy of +/- 10 NM or better for 95% of the flight time in RNP-10 airspace,
- (ii) an RNP-10 time limit is established for aircraft equipped with only Inertial Navigation Systems (INS) or Inertial Navigation Units (INU), in order to meet the Pacific RNP-10 accuracy requirements,
- (iii) the aircraft meets the technical requirements of the navigation element of *FAA Order 8400.12A, Required Navigation Performance 10 (RNP-10) Operational Approval*,
- (iv) flight crew training is provided on the operation of the long range area navigation systems in accordance with the training requirements set out in subsection 724.115(22), and
- (v) flight crew training is provided on operations in Pacific RNP-10 airspace in accordance with the training requirements set out in subsection 724.115(35).

(3) Instrument Approaches - Global Positioning System (GPS)

(a) The standard requirements for authorization to fly instrument approach procedures using only GPS navigation information are:

- (i) an operational evaluation in accordance with subsection 724.08(3)(b) has been completed by the Minister on each aircraft type/GPS/FMS model installation for which approach authorization is sought;
- (ii) an air operator has an approved flight crew training and qualifications program for use of the GPS/FMS system that meets the requirements of subsection 724.115(22); and
- (iii) standard operating procedures have been amended to reflect GPS approach operations and approved by the Minister (where required).

(b) The following items will be assessed in the operational evaluation prior to the approval of the operator's GPS approach standard operating procedures (where applicable) and training program. Identical installations of the same model of GPS in the same type of aircraft with the same operator do not need separate evaluations.

(i) Database

The geographical coverage area for the database shall be compatible with the type of operations conducted by the company. The air operator shall have procedures in place to ensure that the database will be updated in accordance with the appropriate data revision cycle. This shall include a contract with a database supplier and the inclusion, in the

appropriate company manuals, of the person responsible for installing the updates in the aircraft. The company shall have a procedure in place for pilots to report database errors and for information on database errors to be passed on to other company pilots, the avionics manufacturer and the Minister.

(ii) Unit Installation and Operation

The handling and procedures associated with the GPS avionics shall be such that all operations required for GPS approach can be accomplished without an adverse impact on normal crew duties and responsibilities. GPS related tasks shall not consume the attention of the pilot not flying (PNF) during critical phases of flight (i.e. between the time the aircraft turns inbound on the final approach course and the time the aircraft is established in the climb configuration on a missed approach).

(iii) Control Display Unit (CDU) and Course Deviation Indicator (CDI) / Distance Display

If the GPS/FMS control unit is not adequately accessible from each pilot position, or if GPS course deviation and distance displays are not within the primary field of view at both pilot stations, air operators shall designate in the standard operating procedures the position that the pilot flying (PF) and pilot not flying (PNF) are required to occupy during GPS approach for that type of installation. Aircraft types that are certified for operation by two crew members shall have GPS course deviation and distance displays at each pilot station. An Operation Specification authorizing GPS approaches shall not be issued unless the PNF has a means acceptable, in the Minister's opinion, of monitoring the PF during an approach.

(iv) Distance Display on the HSI

Installations where GPS guidance information (course tracking, To/From and NAV flags) are switched onto the HSI for display, but the DME distance information is not switched out (i.e. DME distance rather than GPS distance is displayed continuously on the HSI even when GPS source is selected to HSI), shall require air operators, in their standard operating procedures for GPS approach, to deselect other NAV/DME sources to eliminate distance displays in the pilot's primary field of vision not related to the approach procedure being flown.

(v) Annunciation

Responses to system annunciation (including Receiver Autonomous Integrity Monitoring (RAIM) warnings), the means of selecting GPS track information to the CDI/HSI and the means of coupling GPS steering information to the aircraft automatic flight control system shall be compatible with the safe operation of the aircraft type/category. Standard operating procedures shall specify the procedure whereby the control unit is programmed, approach waypoints are verified against an independent source, approach mode is armed, and cockpit NAV source and AFC guidance source

switches are selected and verified. Any switch selection or programming errors that the Minister believes are likely to occur and that could lead to a serious incident shall, if possible, be identified and addressed in training and in the standard operating procedures. Otherwise, the installation shall not be approved for approach use.

(vi) Airborne Evaluation

The Minister shall observe the pre-flight and in-flight operation of the unit on at least one GPS approach and missed approach. If the PF is allowed to occupy either seat during GPS approaches, then one approach from each pilot position shall be demonstrated. An airborne evaluation in an aircraft must take place under VFR. Emphasis will be on crew co-ordination, pilot workload (PF and PNF), and switch selections.

DIVISION III - FLIGHT OPERATIONS

724.14 *Scheduled Air Service Requirements*

The standard for scheduled operations into or out of an uncertified aerodrome is as follows:

The operation shall be conducted under conditions established by the Minister which require the air operator and aerodrome operator to ensure a level of safety in respect to the use of the aerodrome that is equivalent to the level of safety established by Subpart 302 of the *Canadian Aviation Regulations*.

724.15 *Operational Control Systems*

Operations conducted under Subpart 704 of the *Canadian Aviation Regulations* require a Type C or D operational control system. Another organization may be contracted to exercise operational control on behalf of an air operator.

NOTE:

A Type A or Type B system is only required for No Alternate IFR.

Type A

(1) General

(a) Application

As required for No Alternate IFR operations, where an operator chooses to operate at a higher level than Type B, below.

(b) Responsibility and Authority

Prior to acceptance by the pilot-in-command of the Operational Flight Plan (OFP), operational control, as delegated by the Operations Manager in the approved *Company Operations Manual*, is exercised jointly by the flight dispatcher and the pilot-in-command of a flight.

After the pilot-in-command accepts the Operational Flight Plan, the flight dispatcher and the pilot-in-command share responsibility for Flight Watch. The flight dispatcher shall provide pertinent and related flight information to the pilot-in-command, including any changes to the Operational Flight Plan proposed by the dispatcher or the air operator. Once a flight has commenced, the final decision on any changes to the Operational Flight Plan shall be taken by the pilot-in-command based on considerations of safety.

Limited pilot self-dispatch of flights may be permitted at those enroute stops where a lack of communications facilities prevents the co-authority dispatch of a flight. In such cases, the air operator shall develop, and submit to Transport Canada for approval, those additional procedures that are intended to compensate for the lack of flight dispatcher participation in the flight's next operational flight plan.

(c) Centres

The Flight Dispatch Centre shall be established so as to ensure operational control throughout the air operator's entire route structure or area of operations.

(d) Communications

(i) In-flight Communications

Timely and direct communication between the responsible flight dispatcher, if applicable, and the pilot-in-command of a flight shall be maintained during flight time over all or almost all the route structure. A communications capability similar to that required for a Type B Operational Control system may be authorized for mid-route sectors of flights and certain destinations, such as those specified in paragraph(1)(b) above, where direct communication is not practical.

(ii) On-ground Communications

A direct communications capability between the pilot-in-command and the flight dispatcher shall be provided at any station regularly served by the air operator. The equipment used shall be accessible to the pilot-in-command and may include the following:

- (A) VHF/HF Radio voice;
- (B) telephone;
- (C) data link; and
- (D) teletype.

This requirement may be waived by Transport Canada at those stations where a lack of facilities prevents communication between the pilot-in-command and flight dispatch.

Timely communication means the ability to establish communications domestically within 30 minutes of first trying and internationally within one hour when the flight is in cruise.

Direct communication means the ability of the flight dispatcher and the pilot-in-command to communicate using the air operator's facilities, an electronic data link facility, or operated by a third party according to an agreement.

(e) Flight Dispatchers On Duty

The number of flight dispatchers on duty at any time a dispatch function is required shall be sufficient to provide Flight Dispatch and Flight Watch services.

(2) Flight Dispatch Centre

(a) Each centre shall have a means of providing to the flight dispatcher without delay:

- (i) NOTAMs and NOTAM summaries;
- (ii) all weather reports for airports used as destination or alternate airports or for emergencies;
- (iii) forecasts, area and terminal, for the area of responsibility and such wider area as are needed for proper weather trend analysis; and
- (iv) weather radar summaries, where available as part of the normal weather reporting system.

The air operator service shall establish a system to inform flight dispatchers at each centre of significant changes in flight conditions and in conditions at stations significant to the company's flights.

(b) Each centre shall be provided with:

- (i) aeroplane operating manuals and Minimum Equipment Lists, as appropriate;
- (ii) *Company Operations Manual*;
- (iii) airport runway data; and
- (iv) such additional information as may be needed to enable the formulation of an operational flight plan or to exercise Flight Watch services.

(c) Each centre shall be provided with communications equipment that ensures:

- (i) timely and direct communications between the responsible flight dispatcher, if applicable, and the pilot-in-command during flight time over all or almost all the route structure. A communications capability similar to that of a Type B Operational Control System may be authorized for mid-route sectors of flights where direct communications are not possible;

- (ii) direct radio voice, telephone, data link, or teletype contact with the pilot-in-command at each airport regularly served by the air operator within the area of responsibility;
- (iii) a means to provide a hard copy of an operational Flight Plan, or an amendment to same, to the pilot-in-command; and
- (iv) direct ATS contact.

(3) Flight Dispatcher (Operations Officer)

- (a) The air operator shall ensure that each flight dispatcher is trained and qualified in accordance with the requirements of its approved training program. (Dispatcher training programs are contained in Subpart 725, Division VIII of the *Commercial Air Services Standards*).
- (b) Before commencing duty, a flight dispatcher shall receive a briefing on, or shall study, all pertinent weather charts, weather reports, NOTAMs, operational restrictions in force, flights in the air, flights for which Operational Flight Plans (Dispatch Releases) have been issued, but that have not yet commenced and for which he or she shall be responsible, and the forecast flight schedule.
- (c) The responsible flight dispatcher may supervise personnel, including assistants, as part of an approved on-the-job training program, provided this supervision does not interfere with the performance of his or her duties.
- (d) The flight dispatcher shall maintain a record of information generated or exchanged in relation to any flight for which that flight dispatcher has responsibility.

(4) Dispatch Release

The Dispatch Release of a flight occurs when the flight dispatcher approved the Operational Flight Plan, after which it is submitted to the pilot-in-command for acceptance. When there is disagreement between the flight dispatcher and the pilot-in-command over the dispatch of a flight, the disagreement resolution policy, where one has been specified by the air operator, or the most conservative course of action shall be followed. The dispatch release may be in the form of an Operational Flight Plan signed by the flight dispatcher or it may consist of a separate document signed in accordance with approved air operator operating procedures.

A means shall be provided and procedures developed to ensure that at each location where flights originate, the pilot-in-command:

- (a) receives meteorological information related to the flight;
- (b) obtains a hard copy of the Operational Flight Plan; and
- (c) except where communication is not practical, can contact the responsible flight dispatcher prior to take-off, if necessary.

(5) Flight Watch

- (a) A flight dispatcher shall maintain current information on the progress of flights for which he or she is responsible.
- (b) A Flight Watch, which shall continue until completion of the flight, shall be maintained on all factors and conditions that might affect the Operational Flight Plan. The pilot-in-command shall be kept fully advised of all these factors and conditions.
- (c) In-flight reports shall be directed to the flight dispatcher performing Flight Watch:
- (i) after each take-off and landing;
 - (ii) at least once an hour on any flight longer than one hour conducted in uncontrolled airspace;
 - (iii) at intervals not greater than two hours on international operations where communications are possible;
 - (iv) when the fuel remaining at any time on the flight falls below the minimum specified on the Operational Flight Plan; and
 - (v) where the pilot-in-command determines a change is necessary to the Operational Flight Plan enroute.

Type B**(1) General****(a) Application**

As required for No Alternate IFR operations.

(b) Responsibility and Authority

- (i) The requirements are the same as for Type A, paragraph 1(b); or
- (ii) when departure is from an airport not routinely served by the air operator and communications do not permit the co-authority dispatch of a flight, the Operational Flight Plan (dispatch release) shall be established before the arrival of the flight. The pilot-in-command shall advise the flight dispatcher of any modifications made to the Operational Flight Plan when communications allow.

(c) Centres

The Flight Dispatch Centre shall be established so as to provide assistance to the pilots-in-command over any area for which a Type B system is approved.

(d) Communications**(i) In-flight Communications**

Direct or indirect communication between the flight dispatcher and the pilot-in-command shall be maintained during flight time with as short a delay as practical considerations permit. Wherever possible, communications shall be provided by other than Air Traffic Services. The use of ATS communications systems is permitted. A private agency under contract to the air operator shall be approved to provide the required communications services.

(ii) On-ground Communications

The requirements are the same as for Type A, paragraph 1(d)(ii).

(e) Flight Dispatchers On Duty

The requirements are the same as for Type A, paragraph 1(e).

(2) Flight Dispatch Centre

(a) The requirements are the same as for Type A, paragraph 2(a).

(b) The requirements are the same as for Type A, paragraph 2(b).

(c) Each centre shall be provided with communications equipment that ensures:

(i) direct contact with the pilot-in-command during flight when operating in the vicinity of airports regularly served by the air operator. At those stations where a lack of facilities prevent direct communications between the pilot-in-command and flight dispatch, reliable indirect contact through a ground station and radio relay from that station by the air operator personnel to the pilot-in-command shall be permitted;

(ii) direct communication with the flight line at each airport regularly served by the operator; and

(iii) direct ATS contact.

(3) Flight Dispatcher (Operations Officer)

The requirements are the same as for Type A, Section 3.

(4) Dispatch Release

The requirements are the same as for Type A, Section 4, except where differences are approved.

(5) Flight Watch

The requirements are the same as for Type A, Section 5, with the exception of subparagraph 5(c)(iii), which is to be observed as far as practical, taking into consideration the nature of the particular operations.

Type C

(1) General

(a) Application

A Type C classification shall apply to air operators operating under Instrument Flight Rules (IFR) and Visual Flight Rules (VFR) at night in Commuter Operations using:

- (i) aeroplanes with a seating configuration, excluding pilots, of 10 to 19; or
- (ii) turbo-jet aeroplanes with a seating configuration, excluding pilots, of 19 or less.

(b) Responsibility and Authority

Operational control is delegated to the pilot-in-command of a flight by the Operations Manager, who retains responsibility for the day-to-day conduct of flight operations.

(c) Centres

Current information on the location of the air operator's aeroplanes shall be maintained at the main base of operations or, where appropriate, at its sub-base of operations;

(d) Communications

Each aeroplane shall be equipped with serviceable and functioning communications equipment that permits the pilot-in-command to communicate with a ground radio station for the purpose of flight following. Such a ground station may be operated by the government, the air operator or a private agency;

(e) Personnel On Duty

Refer to section 3 below.

(2) Dispatch Release

Flights operated under this system are self-dispatched and released by the pilot-in-command. Where an air operator chooses to use a Dispatch Release, as required under a Type B system, the flight dispatcher preparing that release shall be qualified in accordance with Type A operational control system.

(3) Flight Watch and Flight Following

Flight Following for a Type C system is the monitoring of a flight's progress, the provision of such operational information as may be required by that flight, and the notification of appropriate air operator and search-and-rescue authorities if the flight is overdue or missing.

Flight Following procedures and the standards of training and qualification for the individual performing this function shall be described in the air operator's *Company Operations Manual*.

(a) If an air operator chooses to use either a Type A or B system, Flight Watch shall be required and exercised in accordance with the requirements of that system.

(b) If an air operator chooses to use pilot self-dispatch, the pilot-in-command is solely responsible for Flight Watch but shall be supported by an air operator provided Flight Following System containing the following elements:

(i) a flight follower qualified and knowledgeable in the air operator's flight alerting procedures, on duty and able to respond to requests by the pilot-in-command for information related to the flight. Such information shall include meteorological information without analysis or interpretation;

(ii) the progress of each flight from its commencement to its termination, including any intermediate stops, shall be monitored, which may be done by the same person as in subparagraph 3(b)(i) above; and

(iii) the pilot-in-command shall be responsible for passing messages concerning aeroplane landings and departures from point of origin, enroute stops, and final destination to the person described in subparagraph 3(b)(i) above.

Type D

(1) General

(a) Application

A Type D classification shall apply to all commuter operations under day VFR, except for turbo-jet aeroplanes.

(b) Responsibility and Authority

Operational control is delegated to the pilot-in-command of a flight by the Operations Manager, who retains responsibility for the day-to-day conduct of flight operations.

(c) Centres

Current information on the location of the air operator's aeroplanes shall be maintained at the main base of operations, its sub-base of operations or where appropriate from the location from which the flight following is being carried out.

(d) Communications

Each aeroplane shall be equipped with serviceable and functioning communications equipment that permits the pilot-in-command to communicate with a ground radio station for the purpose of exchanging messages with the air operator. Such a ground station may be operated by the government, the air operator or a private agency.

(e) Personnel On Duty

A person, qualified and knowledgeable in the air operator's flight alerting procedures, shall be on duty or available when operations are being conducted.

(2) Flight Following

Flight Following for a Type D system is the monitoring of a flight's progress and the notification of appropriate air operator and search-and-rescue authorities if the flight is overdue or missing.

Flight Following procedures and the standards of training and qualification for the individual performing this function shall be described in the air operator's *Company Operations Manual*:

- (a) each flight shall be conducted under a VFR Flight Plan, or Flight Itinerary, as appropriate;
- (b) the pilot-in-command is responsible for Flight Watch but shall be supported by an air operator Flight Following System that shall monitor the progress of each flight from its commencement to its termination, including any intermediate stops. The person performing the flight following functions, who may be the same person as in paragraph 1(e) above, shall be delegated to do so by the Operations Manager; and
- (c) the pilot-in-command shall be responsible for passing messages concerning aeroplane landings and departures from the point of origin, at enroute stops, and from the final destination in order to satisfy the requirements of paragraph 2(b) above.

724.17 Operational Flight Plan

In accordance with the classification of its operational control system (724.15), an air operator shall adhere to the full 30 item list below; the abbreviated 18-item list, as indicated by asterisk; or an informal operational flight plan. The minimum content for an operational flight plan (OFP) applies as follows:

Operational Control System Classification	Type of Operational Flight Plan
Type C and Type D: IFR, except local, and VFR at night	18-item list abbreviated OFP
Type C and Type D: VFR and IFR local	Informal OFP and ATC flight plan, flight itinerary, or other flight following information, as applicable.

For local flights (within 25 nm) or flights that terminate at the departure aerodrome, the operational flight plan need not be a formal document unless the air operator specifies otherwise in its *Company Operations Manual*.

An air operator that operates flights over routes with little or no cruise segment (less than 30 minutes) may use the abbreviated operational flight plan.

The Minimum Required Content of an Operational Flight Plan is:

- (1)* air Operator's name;
- (2)* date;

- (3)* aeroplane registration;
- (4)* aeroplane tail number (as applicable);
- (5)* aeroplane type and model (as applicable);
- (6)* flight number (as applicable);
- (7) type of flight; Instrument Flight Rules or Visual Flight Rules at night unless all the air operator's flights are the same;
- (8)* pilot-in-command's name;
- (9)* flight dispatcher's name (if applicable);
- (10)* departure aerodrome;
- (11)* destination aerodrome;
- (12)* alternate aerodrome, as applicable, including enroute alternates where required;
- (13) routing to destination by successive navigational way points and a method to obtain associated tasks for each;
- (14) routing to alternate aerodrome;
- (15) specification of any way points enroute to satisfy any special operations requirements;
- (16)* planned cruise altitudes to destination and alternate (as applicable);
- (17) planned cruise, True Air Speed;
- (18) planned cruise, Indicated Air Speed, or mach number (as applicable);
- (19) winds at planned cruise altitude:
these may be expressed in terms of direction/velocity or as a component/drift angle;
- (20) temperature at cruise altitude;
- (21) ground speed or wind component during cruise;
- (22)* estimated time enroute: if broken down into way point time components, a total shall be specified;
- (23) time from destination to alternate (as applicable);
- (24) distance to destination: if broken down into way point distance components, a total shall be specified;
- (25) distance from destination to alternate;
- (26)* fuel burn enroute and from destination to alternate;

(27)* fuel as applicable for the type of flight plan:

- (a) taxi;
- (b) destination;
- (c) alternate;
- (d) contingency (as applicable);
- (e) holding reserve;

(28)* weights:

- (a) total fuel on board;
- (b) zero fuel weight (if applicable); and
- (c) planned maximum take-off weight;

(29)* signature of pilot-in-command and as applicable the Flight Dispatcher, or alternate means of certifying acceptance;

(30)* number of persons on board: crew and passengers, as amended by final load figures.

The format of the full operational flight plan shall allow the crew to record the fuel state and the progress of the flight relative to the plan. The operational flight plan may be computer generated or produced manually working from charts and tables, by either the flight dispatcher or the flight crew. When an operational flight plan is prepared manually, an approved form displaying the requisite information and providing the necessary space to make flight following entries as the flight progresses shall be used.

The air operator shall specify, in its *Company Operations Manual*, how formal acceptance of the operational flight plan by the Pilot-in-Command and, if applicable, the flight dispatcher shall be recorded.

724.26 Take-Off Minima

(1) Weather Below Landing Limits

The standards for conducting a take-off in IMC when weather conditions are above take-off, but below landing minima for the runway in use are:

- (a) For departures where the operator has prevented more than 9 passenger seats from being occupied:
 - (i) an alternate aerodrome is specified in the IFR flight plan and that aerodrome is located:
 - (A) in the case of a twin-engined aircraft, within the distance that can be flown in 60 minutes at the normal cruising speed; or

(B) in the case of an aircraft with three or more engines, within the distance that can be flown in 120 minutes at the normal cruising speed; and

(b) For all other departures:

(i) an alternate aerodrome is specified in the IFR flight plan and that aerodrome is located:

(A) in the case of a twin-engined aircraft, within the distance that can be flown in 60 minutes at the one-engine-inoperative cruise speed, or

(B) in the case of an aircraft with three or more engines, within the distance that can be flown in 120 minutes at the one-engine-inoperative cruise speed.

(2) Weather Below Published Take-off Minima

The standard for take-off in a turbine-powered aeroplane in IMC below the weather minima specified in the *Canada Air Pilot* or in an equivalent foreign publication, or in the route and approach inventory or the instrument approach procedures referred to in the air operator certificate is:

(amended 2000/12/01)

(a) Take-off Minima Reported Visibility RVR 1200 feet (1/4 mile) - Aeroplanes with Certified Engine-out Take-off and Climb Performance

(i) the *Company Operations Manual* shall contain detailed guidance on how to determine departure one engine inoperative climb gradient and obstacle clearance;

(ii) a take-off alternate selected in accordance with 724.26(1) shall be specified in the flight plan;

(iii) the runway is equipped as detailed in the manual of *Aerodrome Standards and Recommended Practices* with serviceable and functioning high intensity runway lights or runway centre-line lights or with runway centre-line markings that are plainly visible to the pilot throughout the take-off run;

(iv) the pilot-in-command is satisfied that the required RVR 1200 feet (1/4 mile) visibility exists for the runway to be used before commencing take-off;

(v) the pilot-in-command and second-in-command attitude instruments (artificial horizons) on the aeroplane shall incorporate pitch attitude index lines in appropriate increments above and below the zero pitch reference line to at least 15°, and are capable of ensuring ready depiction of total aeroplane attitude. An approved failure warning system which will immediately detect essential instrument and equipment failures or malfunctions shall be installed and operative. For the purpose of reduced visibility take-offs, essential instruments are defined as attitude indicators, directional gyros and HSI's;

(vi) the flight crew members shall be given training in accordance with 724.115 (21) as applicable;

(vii) the chief pilot, or his or her delegate, has certified in the pilot's training file that the pilot-in-command is competent to conduct an RVR 1200 feet (1/4 mile) take-off; and (amended 2000/12/01)

(viii) the pilot-in-command shall have at least 100 hours of pilot-in-command experience on the aeroplane type. A pilot-in-command converting onto an aeroplane type similar to that on which he had been maintaining pilot-in-command qualifications at these limits for at least 90 days prior to conversion may be authorized these limits by the air operator on completion of required line indoctrination. Similar aeroplanes shall be considered as turbo-propeller to turbo-propeller or turbo-jet to turbo-jet.

(b) Take-off Minima Reported Visibility RVR 1200 feet (1/4 mile) - Aeroplanes without Certified Engine-out Take-off and Climb Performance

(i) the *Company Operations Manual* shall contain detailed guidance on how to determine single-engine climb gradient and obstacle clearance;

(ii) a take-off alternate selected in accordance with 724.26(1) shall be specified in the flight plan; and

(iii) the takeoff weight of the aeroplane shall not exceed the weight determined from the Aeroplane Flight Manual that, considering the runway characteristics and ambient weather conditions, meets the following requirements:

(A) Aeroplanes carrying nine or fewer passengers:

(I) the required Accelerate-Stop Distance shall not exceed Accelerate-Stop Distance Available (ASDA); and

(II) the required engine-out take-off distance shall not exceed Take-off Distance Available (TODA); and

NOTE:

Where the aircraft manufacturer does not provide data for single-engine take-off distance, but provides data for engine-out climb in the take-off configuration, the aeroplane weight shall permit a positive rate of climb using the configuration and speed at liftoff.

(B) Aeroplanes carrying 10 or more passengers:

(I) the required Accelerate-Stop Distance shall not exceed Accelerate-Stop Distance Available (ASDA);

(amended 1998/06/01)

(II) the required engine-out take-off distance shall not exceed Take-Off Distance Available (TODA); and

(amended 1998/06/01)

(III) the Net Take-off Flight Path to 1500 feet AGL shall clear all obstacles by at least 35 feet vertically or at least 200 feet horizontally within the aerodrome boundaries and 300 feet horizontally outside those boundaries;

(amended 1998/06/01)

(iv) the runway is equipped as detailed in the manual of *Aerodrome Standards and Recommended Practices* with serviceable and functioning high intensity runway lights or runway centre line lights or with runway centre-line markings that are plainly visible to the pilot throughout the take-off run;

(v) the pilot-in-command is satisfied that the required RVR 1200 (1/4 mile) visibility exists for the runway to be used before commencing take-off;

(vi) the pilot-in-command and first officer attitude instruments (artificial horizons) on the aeroplane shall incorporate pitch attitude index lines in appropriate increments above and below the zero reference line to at least 15°, and are capable of ensuring ready depiction of total aeroplane attitude. An approved failure warning system which will immediately detect essential instrument and equipment failures or malfunctions shall be installed and operative. For the purpose of reduced visibility take-offs, essential instruments are defined as attitude indicators, directional gyros and HSI's;

(vii) the flight crew members shall be given training in accordance with subsection 724.115(21) as applicable. Pilots must also complete annual training in a simulator for the type, certificated to Level B or higher, during which RVR 1200 take-offs are practiced;

(viii) the chief pilot, or his or her delegate, has certified in the pilot's training file that the pilot-in-command is competent to conduct an RVR 1200 feet (1/4 mile) visibility take-off; and

(amended 2000/12/01)

(ix) the pilot-in-command shall have at least 100 hours of pilot-in-command experience on the aeroplane type. A pilot-in-command converting onto an aeroplane type similar to that on which he had been maintaining pilot-in-command qualifications at these limits for at least 90 days prior to conversion may be authorized these limits by the air operator on completion of required line indoctrination. Similar aeroplanes shall be considered as turbo-propeller to turbo-propeller or turbo-jet to turbo-jet.

(c) Take-off Minima Reported RVR 600 feet

(i) the *Company Operations Manual* shall contain detailed guidance on how to determine departure one engine inoperative climb gradient and obstacle clearance;

(ii) a take-off alternate is selected in accordance with 724.26(1);

(amended 1999/09/01)

(iii) the runway has the following equipment in accordance with the manual for *Aerodrome Standards and Recommended Practices*:

(A) serviceable and functioning high intensity runway lights, runway centre-line lights and centre-line markings that are plainly visible to the pilot throughout the take-off run;

(B) at least two transmissometers, one situated at the approach end and one at the mid-point of the runway, each reading not less than RVR 600 feet; and

(C) if three transmissometers are available and the mid-point transmissometer is unserviceable, take-off is authorized provided the transmissometers at the approach end and the departure end of the runway, each is reading not less than RVR 600 feet;

(iv) the pilot-in-command is satisfied that the required RVR 600 feet visibility exists for the runway to be used before commencing take-off;

(v) the pilot-in-command and second-in-command attitude instruments (artificial horizons) on the aeroplane shall incorporate pitch attitude index lines in appropriate increments above and below the zero pitch reference line to at least 15°, and be capable of ensuring ready depiction of total aeroplane attitude. An approved failure warning system which will immediately detect essential instrument and equipment failures or malfunctions shall be installed and operative;

(amended 1999/09/01)

Information Note:

For the purpose of reduced visibility take-offs, essential instruments are defined as attitude indicators, directional gyros and HSI's;

(vi) the flight crew members shall be given training in accordance with subsection 724.115(21) as applicable;

(vii) the pilot-in-command, and the second-in-command if authorized by the air operator for lower than normal take-off minima, shall be checked within the preceding 12 months in an approved synthetic flight training device by an approved company check pilot or a Transport Canada Inspector and shall be certified in their pilot training files as competent to conduct an RVR 600 feet take-off; and

(amended 2000/12/01)

(viii) the pilot-in-command shall have at least 100 hours of pilot-in-command experience on the aeroplane type. A pilot-in-command converting onto an aeroplane type similar to that on which he had been maintaining pilot-in-command qualifications at these limits for at least 90 days prior to conversion may be authorized these limits by the air operator on completion of required line indoctrination.

(amended 1999/09/01)

Information Note:

'Aeroplane types similar' are considered as turbo-propeller to turbo-propeller or turbo-jet to turbo-jet.

724.27 No Alternate Aerodrome - IFR Flight

For an air operator of aeroplanes to qualify to conduct a flight under IFR without naming an alternate aerodrome on the flight plan the following standard shall be met:

(1) Area of Operations

(a) take-off aerodrome shall be:

(i) situated within the North American continent, the Caribbean islands and Bermuda;
and

(ii) not more than the hours of flight time (Scheduled) from the aerodrome of intended landing;

(b) aerodrome of intended landing authorized for no alternate IFR shall meet the requirements of subsection (3) below; and

(c) provided the requirements of subsections (2), (3), (4), (5) and (6) are met, the pilot-in-command may refile "No Alternate IFR" on flights to a destination aerodrome in Canada, regardless of the location of the departure aerodrome, when within six hours of the scheduled destination aerodrome.

(2) Weather Requirements

For at least one (1) hour before and until one (1) hour after the estimated time of arrival at the aerodrome of intended landing, there shall be, in respect to that aerodrome:

(a) no fog or other restrictions to visibility, including precipitation, whether forecast or reported, below 3 miles;

(amended 1998/06/01)

(b) no thunderstorms, whether isolated or otherwise forecast or reported;

(amended 1998/06/01)

(c) a forecast ceiling of at least 1,000 feet above FAF altitude and a visibility of at least 3 miles or a ceiling of at least 1,500 feet above the MDA and a visibility of at least 6 miles;
and

(d) no freezing precipitation whether forecast or reported;

(amended 1998/06/01)

(3) Aerodrome of Intended Landing - Requirements

(a) the aerodrome of intended landing shall be:

- (i) equipped with at least two (2) separate runways each of which shall be operational and suitable for a safe landing for the aeroplane type, taking into consideration the approved operational limitations; and

NOTE:

The reciprocal of one runway is not acceptable as the second runway.

- (ii) equipped with emergency or standby electrical power supply in support of the main electrical power supply used to operate all equipment and facilities that are essential to the safe landing of the aeroplane, whether such landing be by day or by night;

(4) Flight Dispatch Requirements

The Operation Control System shall be Type A or Type B as applicable;

(5) Fuel Requirements

The minimum fuel required for a no alternate IFR flight plan must meet the requirements of section 704.20 of the *Canadian Aviation Regulations* and shall include the following:

- (a) taxi fuel;
- (b) fuel to destination;
- (c) contingency fuel;
- (d) holding reserve fuel; and
- (e) fuel for flights in International and Northern Airspace shall be additional contingency fuel or enroute reserve fuel, whichever is the greater; and

(6) Aerodrome Familiarization

Pilots shall be thoroughly familiar with all suitable diversionary aerodromes which are available (within the fuel and oil reserve carried) in respect of any flight operated on a “no alternate IFR” basis.

724.28 VFR OTT Flight
(amended 2007/06/30)

The standard for operating VFR OTT is:

- (1) the flights shall be conducted in accordance with the requirements of section 602.116 of the *Canadian Aviation Regulations*, and
- (2) the flights shall be operated under conditions allowing for descent under VMC, or continuation of the flight under VMC if its critical engine fails.

724.29 Routes in Uncontrolled Airspace

For an air operator to establish routes in uncontrolled airspace the following standards shall be met:

(1) A minimum obstruction clearance altitude (MOCA) shall be established for each route segment by the use of aeronautical charts and the *Canada Flight Supplement* for updating of significant obstructions as follows:

(a) for flight under IFR a minimum altitude of 2000 feet above the highest obstacle located within a horizontal distance of 10 miles from the centre line of route;

(b) for flight at night in VFR conditions a minimum altitude of 1000 feet above the highest obstacle located within 3 miles from the centre line of the route.

(2) For each route segment a minimum enroute altitude (MEA) shall be established which meets or exceeds the minimum obstruction clearance altitude and assures navigational signal coverage. For line of sight navigation aid reception distance, for ground installed aids the minimum reception altitude may be calculated by calculating the square root of an altitude above the navigation aid and multiplying the result by 1.25 (Sq. root 3000 ft. is 54.7 x 1.25 = 68 miles). The MEA will be established to the nearest higher 100 foot increment.

(3) Each route shall include:

(a) the FROM/TO route segment;

(b) track;

(c) MOCA;

(d) MEA;

(e) distance between fixes or waypoints; and

(f) navigation aids.

(4) the air operator shall maintain a record of their company routes in a form and format similar to the catalogue of approved routes.

Provided the above procedures are followed, an air operator's pilot may use routes that are not yet contained in the record of company routes.

(5) Prior to initial use of other than a publicly available navigation aid, permission of the owner/operator shall be obtained and retained in company records. No VFR at night or IFR flights shall commence unless the navigation aids upon which the route is predicated are in satisfactory operating condition, or the flight is conducted using an approved long range navigation system.

When company routes are predicated on other than a publicly available navigation aid and arrangements have not been made with the owner/operator to advise when the navigation aid is out of service, instructions to pilots shall be included on how, and whom to contact, to confirm that the navigation aid is in service.

(6) The air operator's *Company Operations Manual* shall be amended to outline the above procedures and information for pilot guidance.

(7) The flight visibility shall not be less than 3 miles for flights in VFR at night.

NOTE:

Pilot training for area navigation systems is contained in section 724.115 of the Commercial Air Services Standards.

724.32 Weight and Balance Control

The weight and balance system required by section 704.32 of the *Canadian Aviation Regulations* shall specify for each flight how the air operator will establish and be responsible for the accuracy of:

(amended 2003/06/01)

(1) aeroplane basic empty weight and centre of gravity determined in accordance with the Airplane Flight Manual;

(2) aeroplane operational empty weight and centre of gravity. The aeroplane operational empty weight is the actual weight of the aeroplane before loading for dispatch consisting of the aeroplane basic empty weight and may include removable equipment, flight crew members (including baggage), crew members (including baggage and supplies), water, toilet fluids and chemicals, oil, unusable fuel and emergency equipment and shall be defined by the air operator;

(3) weight of passengers, carry-on baggage and checked baggage, determined either by actual weight, by using approved standard weights or by using approved survey weights, and the actual weight of cargo;

(4) weight of the fuel load determined by using either the actual specific gravity or a standard specific gravity;

(5) aeroplane loading including, but not limited to, compartment weight and bulk cargo limits, floor loading limits, cargo restraint and unit load device/pallet loading considering weight and centre of gravity limits;

(6) aeroplane zero fuel weight (if applicable);

(7) location of the centre of gravity to include the longitudinal position and where required, lateral and vertical positions;

(8) preparation and disposition of all required documentation whether by the air operator or other qualified personnel authorized by the air operator; and

(9) the training, both initial and recurrent, of all air operator personnel and other qualified personnel authorized by the air operator with duties and responsibilities in this system. The training shall be in the appropriate parts of the *Company Operations Manual*.

The weight and balance computation may be incorporated in the operational flight plan or be a separate form.

724.33 Passenger and Cabin Safety Procedures

(amended 1998/06/01)

(1) Safe Movement of Passengers to and From the Aeroplane

The procedures for the safe movement of passengers to and from the aeroplane shall include:

(a) wherever possible, aeroplanes are parked in a location that avoids passenger exposure to hazardous conditions;

(b) announcements to embarking/debarking passengers as warranted to alert them to hazardous conditions or dangers that may be encountered during embarkment/disembarkment and/or enroute to or from the airside exit/entrance points, and advising them to follow any directions provided outside the aeroplane;

(c) adequate guidance, and where necessary an escort, provided to passengers so as to ensure that their movements while airside are properly controlled. The responsibility for this shall be clearly defined and the controls shall ensure:

(i) passengers are directed along the correct and safe route between the aeroplane and the airside entrance/exit point, and prompt attention is given to stragglers where necessary;

(ii) an escort is assigned to control passenger movements when the route to or from the aeroplane is congested by other aircraft or vehicles or when required by the Air Carrier Security Measures; and

(iii) passengers are not exposed to hazards from aircraft operations, fuelling equipment, exposure to jet blasts, engines, rotors or propellers, or to the hazards posed by lighting conditions, obstacles positioned along the route or unsafe surface or stairway conditions;

(d) smoking restrictions are enforced;

(e) personal headsets that are used with personal entertainment systems that decrease awareness of other traffic or limit reception of audible direction or warning signals, are not worn;

(amended 1999/09/01)

(f) clearly assigning the responsibility for the opening/closing and the locking/unlocking of terminal building doors, to enable enplaning/deplaning passengers to access the apron or terminal. Where this responsibility is assigned to persons other than the air operator's personnel or those contracted by the air operator, the crew members are so advised;

(g) where conditions so warrant, the embarking/disembarking activity is postponed until a safe walking zone is prepared;

(h) unsatisfactory or hazardous conditions are reported to the responsible authority;

(i) passengers are briefed on how to safely emplane or deplane whenever the aircraft engines are running; and

(amended 1998/06/01)

(j) passengers on float planes are alerted to hazards unique to emplaning and deplaning this type of aircraft.

(amended 1998/06/01)

The procedures shall not preclude the safe embarkment and disembarkment of all passengers.

The procedures shall be incorporated in training programmes and training will be provided to crew members, ground handling and passenger agent staff (including contract personnel) involved with the transfer of passengers between the terminal building and the aeroplane.

The training will be adequate to ensure that personnel are fully aware of their responsibilities, are able to perform their assigned duties for the safety of airside passengers and know to whom the air operator personnel report in the application of their responsibilities. Where there is an overlap in the duties/responsibilities assigned to personnel, the training will ensure that the trainees know the relationship of their duties/responsibilities to those of the other personnel involved.

(2) Fuelling with Passengers on Board

Aeroplanes may be fuelled with passengers on board, embarking or disembarking under the following conditions:

(a) in order to ensure that crew members receive prompt notification of a situation threatening safety such as major fuel spill or a fire, two way communication is maintained between the ground crew supervising the fuelling and the qualified personnel on board the aeroplane so that the aeroplane can be disembarked or evacuated as necessary;

(b) a means of communication among the qualified personnel on board the aeroplane, ground/maintenance crews and fuelling agencies is determined and established and the procedures are provided to the appropriate personnel;

(c) the aeroplane engines are not running unless the aircraft incorporates a propeller brake and the brake is set. The Aircraft Flight Manual must refer to the propeller brake/engine as an auxiliary power unit (APU);

(d) during the fuelling process:

- (i) aeroplane ground power generators or other electrical ground power supplies are not being connected or disconnected;
- (ii) combustion heaters installed on the aeroplane (e.g. wing and tail surface heaters, integral cabin heaters) are not operated;
- (iii) other combustion heaters used in the vicinity of the aeroplane are manufactured to CSA or ULC standards and approved in accordance with the Fire Commissioner of Canada for use in hazardous atmosphere;
- (iv) known high energy equipment such as High Frequency (HF) radios are not operated, unless in accordance with the aeroplane manufacturer's approved flight manual where the manual contains procedures for the use of this equipment during fuelling;
- (v) weather-mapping radar equipment in the aeroplane is not operated unless in accordance with the manufacturer's approved aeroplane flight manual where the manual contains procedures for use during fuelling;
- (vi) aeroplane batteries are not being removed or installed;
- (vii) external battery chargers are not being connected, operated or disconnected;
- (viii) aeroplane-borne auxiliary power units which have an efflux discharging into the zone are not started after filler caps are removed or fuelling connections are made;
- (ix) if an auxiliary power unit (APU) is stopped for any reason during fuelling it shall not be restarted until the flow of fuel has ceased and there is no risk of igniting fuel vapours, however, the APU may be operated in accordance with the manufacturer's approved aeroplane flight manual if the manual contains procedures for starting the APU during fuelling;
- (x) electric tools or similar tools likely to produce sparks or arcs are not being used; and
- (xi) photographic equipment is not used within 10 ft. (3m) of the fuelling equipment or the fill or vent points of the aeroplane fuel systems;

(e) fuelling is immediately suspended when there are lightning discharges within 8 km of the aerodrome;

(f) the aeroplane is fuelled in accordance with manufacturer's procedures for that type of aeroplane;

(g) the aeroplane emergency lighting system is armed or on, (if applicable);

(h) "No Smoking" signs on board the aeroplane are illuminated, as applicable;

(i) procedures are established to ensure that passengers do not smoke, operate portable electronic devices or otherwise produce sources of ignition;

- (j) a minimum of two exits are designated evacuation exits during fuelling; one of which must be the entry doors through which the passengers embarked;
- (k) the designated evacuation exits during fuelling are identified by aeroplane type and published in the *Company Operations Manual*, and are clear and available for immediate use by passengers and crew members should an evacuation be required;
- (l) the air operator has procedures in place to ensure that there is a ready escape route from each designated evacuation exit during fuelling;
- (m) a means of evacuation, such as a deployed integral stair, a loading stair or stand, is in place at the aeroplane door used for the embarking and disembarking of passengers and is free of obstruction and available for immediate use by the aeroplane occupants if necessary;
- (n) a qualified person trained in the operation and use of emergency exits and in emergency evacuation procedures who is ready to initiate and direct an evacuation is at or near the door at which there is a deployed integral stair, a passenger loading stair or stand; and
- (o) Where desirable for climatic reasons, and provided a crew member is on board, an aeroplane embarking door that is inward opening or can be fully opened to the exterior without repositioning of loading stairs or stand may be closed, and latched if necessary to keep it closed, but may not be locked.

(3) Use of Portable Electronic Devices

The prohibited devices, the permitted devices without restrictions and the permitted devices with restrictions are defined as follows, and are to be used in accordance with the stated requirements as applicable:

(amended 1998/06/01)

(a) Prohibited devices:

Any transmitting device that intentionally radiates radio frequency signals;

(b) Permitted devices without restrictions:

- (i) hearing aids;
- (ii) heart pacemakers;
- (iii) electronic watches; and
- (iv) properly certificated air operator installed equipment;

(c) Permitted devices with restrictions:

(i) personal life support systems may be operated during all phases of flight, provided that the device does not cause interference with the aircraft's systems or equipment;

(ii) portable two-way radio communication devices may be used subject to all of the following conditions and restrictions being met:

(A) use is prohibited at all times when the aircraft engines are running, excluding the auxiliary power unit,

(B) when the pre-flight safety briefing begins prior to engine start, use is terminated during the delivery of the pre-flight safety briefing and demonstration, and

(C) the *Company Operations Manual* contains procedures to ensure these devices are turned off and properly stowed during the delivery of the pre-flight safety briefing and demonstration and while the aircraft engines are running;

(iii) other portable electronic devices may be used, except during take-off, climb, approach and landing.

(4) Passengers shall be informed of the air operator's policy pertaining to the use of portable electronic devices and those devices that are prohibited from use during the delivery of the pre-flight safety briefing and demonstration.

(amended 1998/06/01)

(5) When interference with the aircraft's systems or equipment is suspected from use of a portable electronic device, crew members shall:

(amended 1998/06/01)

(a) confirm passenger use of portable electronic device(s);

(b) instruct passenger(s) to terminate the use of portable electronic device(s);

(c) prohibit the use of suspected portable electronic device(s); and

(d) recheck the aircraft's systems and equipment.

(6) The pilot-in-command shall report incidents of portable electronic device interference and include the following information in the report:

(amended 1998/06/01)

(a) Flight Information - aircraft type, registration, date and UTC time of incident, aircraft location (VOR bearing/DIST/LAT/LONG), altitude, weather conditions, pilot name and telephone number;

(b) Description of Interference - description of effects on cockpit indicators, audio or systems, including radio frequency, identification, duration, severity and other pertinent information;

(c) Action Taken by Pilot/Crew to Identify Cause or Source of Interference;

(d) Identification of Portable Electronic device - description of device, brand name, model, serial number, mode of operation (i.e. FM radio), device location (seat location), and regulatory approval number (FCC/other);

(e) Identification of User - name and telephone number of passenger operating the device; and

(f) Additional Information - as determined pertinent by the crew; and

(7) Reports of portable electronic device interference shall be submitted to the Director, Safety Services, Transport Canada, Transport Canada Building, Place de Ville, Ottawa, Ontario K1A 0N8.

(amended 1998/06/01)

724.34 Briefing of Passengers

(1) Standard Safety Briefing

The standard safety briefing shall consist of an oral briefing provided by a crew member or by audio or audio-visual means which includes the following information as applicable to the aeroplane, equipment, and operation:

(a) prior to take-off:

(i) when, where, why and how carry-on baggage is required to be stowed;

(ii) the fastening, unfastening, adjusting and general use of safety belts or safety harnesses;

(iii) when seat backs must be secured in the upright position and chair tables must be stowed;

(iv) the location of emergency exits and for passengers seated next to an exit, how that exit operates;

(v) the location, purpose of, and advisability of reading the safety features card;

(vi) the regulatory requirement to obey crew instructions regarding safety belts and no smoking or Fasten Seat Belt and No Smoking signs and the location of these signs;

(vii) the location of any emergency equipment the passenger may have a need for in an emergency situation such as the ELT, fire extinguisher, survival equipment (including the means to access if in a locked compartment), first aid kit and life raft;

(viii) the use of passenger operated portable electronic devices;

(ix) the location, and operation of the fixed passenger oxygen system, including the location and presentation of the masks; the actions to be performed by the passenger in order to obtain the mask, activate the flow of oxygen and correctly don and secure the mask. This will include a demonstration of their location, method of donning including the use of elastic band, operation, and instruction on the priority for persons assisting others; and

(x) the location, and use of life preservers, including how to remove from stowage/packaging and a demonstration of their location, method of donning and inflation, and when to inflate life preservers;

(b) after take-off, if not included in the pre take-off briefing:

(i) that smoking is prohibited;

(ii) the advisability of using safety-belts or safety harnesses during flight; and

(iii) the requirement to obey crew instructions or fasten seat belt and no smoking signs and the location of these signs;

(c) in-flight because of turbulence:

(i) when the use of seat belts is required, and

(ii) the requirement to stow carry-on baggage; and

(d) Prior to passenger disembarkment, the safest direction and most hazard-free route for passenger movement away from the aeroplane following disembarkment, and any dangers associated with the aeroplane type such as pitot tube locations, propellers, or engine intakes.

The safety message of the briefing may not be diluted by the inclusion of any service information or advertising that would affect the integrity of the safety briefing.

Where no additional passengers have embarked the flight for subsequent take-offs on the same day, the pre-take-off and after take-off briefings may be omitted provided a crew member has verified that all carry-on baggage is properly stowed, safety belts or harnesses are properly fastened, and seat backs and chair tables are properly secured.

(2) Individual Safety Briefing

The individual safety briefing shall include:

(a) any information contained in the standard safety briefing and the safety features card that the passenger would not be able to receive during the normal conduct of that safety briefing; and

(b) additional information applicable to the needs of that person as follows:

(i) the most appropriate brace position for that passenger in consideration of his/her condition, injury, stature, and/or seat orientation and pitch;

- (ii) the location to place any service animal that accompanies the passenger;
- (iii) for a mobility restricted passenger who needs assistance in moving expeditiously to an exit during an emergency:
 - (A) a determination of what assistance the person would require to get to an exit;
 - (B) the route to the most appropriate exit;
 - (C) the most appropriate time to begin moving to that exit; and
 - (D) a determination of the most appropriate manner of assisting the passenger;
- (iv) for a visually impaired person:
 - (A) detailed information of and facilitating a tactile familiarization with the equipment that he/she may be required to use;
 - (B) advising the person where to stow his/her cane if applicable;
 - (C) the number of rows of seats between his/her seat and his/her closest exit and alternate exit;
 - (D) an explanation of the features of the exits, and
 - (E) if requested, a tactile familiarization of the exit;
- (v) for a comprehension restricted person, while using the safety features card, pointing out the emergency exits and alternate exits to use, and any equipment that he/she may be required to use;
- (vi) for persons with a hearing impairment:
 - (A) while using the safety features card, pointing out the emergency exits and alternate exits to use, and any other equipment that the person may be required to use; and
 - (B) communicating detail information by pointing, face-to-face communication permitting speech reading, pen and paper, through an interpreter or through their attendant;
- (vii) for a passenger who is responsible for another person on board, information pertinent to the needs of the other person as applicable:
 - (A) in the case of an infant:
 - (I) seat belt instructions;
 - (II) method of holding infant for take-off and landing;
 - (III) instructions pertaining to the use of a child restraint system;
 - (IV) oxygen mask donning instructions;

- (V) recommended brace position;
- (VI) location and use of life preservers, as required; and
- (B) in the case of any other person:
 - (I) oxygen mask donning instructions;
 - (II) instructions pertaining to the use of a child restraint system; and
 - (III) evacuation responsibilities; and
- (viii) for an unaccompanied minor, instructions to pay close attention to the normal safety briefing and to follow all instructions.

NOTES:

(a) A passenger that has been provided with an individual safety briefing need not be re-briefed following a change in crew if the crew member that provided the individual safety briefing has advised a member of the new crew of the contents of that briefing including any information respecting the special needs of that passenger.

(b) A passenger may decline an individual safety briefing.

(3) Passenger Preparation for an Emergency Landing

The emergency briefing provided in the event of an emergency where time and circumstances permit shall consist of instructions pertaining to:

- (a) safety belts or safety harnesses;*
- (b) seat backs and chair tables;*
- (c) carry-on baggage;*
- (d) safety features cards;*
- (e) brace position (when to assume, how long to remain);*
- (f) life preservers (if applicable); and*
- (g) if applicable, evacuation procedures for an occupant of a child restraint system.*

(amended 1999/09/01)

724.35 *Safety Features Card*

(amended 1998/06/01)

(1) The safety features card shall contain the following information as applicable to the aeroplane and equipment carried:

(amended 1998/06/01)

(a) general safety information including:

- (i) smoking is prohibited on board the aeroplane;
- (ii) each type of safety belt or safety harness installed for passenger use, including when to use, how to fasten, tighten and release;
- (iii) when and where carry-on baggage must be stowed and any other related requirements and restrictions pertinent to that particular aeroplane; and
- (iv) correct positioning of seat backs and chair tables for take-off and landing;

(b) emergency procedures and equipment including:

(i) fixed passenger oxygen system showing:

(A) mask location and presentation; the actions to be performed by the seated passenger in order to obtain the mask, activate the flow of oxygen and correctly don and secure the mask; and

(B) priority for persons assisting others with oxygen;

(ii) location of first aid kits;

(iii) location of fire extinguishers that would be accessible to the passengers;

(iv) location of Emergency Locator Transmitters;

(v) location of survival equipment, and if the stowage compartment is locked, the means of access or location of the key;

(vi) passenger brace position for impact, as appropriate for each type of seat and restraint system installed for passenger use; including the brace position for an adult holding an infant;

(vii) the location, operation and method of using each emergency exit type on the aeroplane, including identification of those emergency exits known to be rendered unusable in a ditching or because of aeroplane configuration such as a combi configuration;

(viii) the safest direction and most hazard-free escape route for passenger movement away from the aeroplane following evacuation;

(ix) the attitude of the aeroplane while floating;

(x) location of life preservers and correct procedures for removal from stowage/packaging; donning and use of the life preserver for adult, child and infant users including when to inflate;

(xi) location and use of life rafts; (as applicable);

(xii) location, removal and use of flotation devices; and

(xiii) the form, function, colour and location of any Floor Proximity Emergency Escape Path lighting system that is installed; and

(c) the name of the air operator and the aeroplane type.

(amended 1998/06/01)

(2) The safety features card shall contain only safety information.

(amended 1998/06/01)

(3) The safety information provided by the card shall:

(amended 1998/06/01)

(a) be accurate for the aeroplane type and configuration in which it is carried and in respect of the equipment carried;

(amended 1998/06/01)

(b) be presented with clear separation between each instructional procedure. All actions required to complete a multi-action procedure to be presented in correct sequence and the sequence of actions to be clearly identified; and

(amended 1998/06/01)

(c) be depicted in a clear and distinct manner.

(amended 1998/06/01)

724.37 Instrument Approach Procedures

(amended 2006/12/01)

Stabilized Constant-Descent-Angle (SCDA) Non-Precision Approach

In order to conduct a stabilized constant descent angle (SCDA) non-precision approach, the following requirements shall be met:

(a) the air operator's flight crew training and qualifications program includes SCDA non-precision approach in accordance with section 704.115 of the *Canadian Aviation Regulations*;

(b) the air operator's standard operating procedures incorporate SCDA non-precision approach in accordance with section 704.124 of the *Canadian Aviation Regulations*, and the procedures include a specified amount to be added to the MDA to compensate for the additional height loss during the missed approach initiation during approaches where

(i) there is a failure of an aircraft system,

(ii) the aircraft is above normal maximum landing weight,

- (iii) the aircraft landing weight is limited by aborted landing climb performance, or
 - (iv) height loss could be expected to be larger than normal;
- (c) the final approach course does not differ from the runway centreline direction by more than 15 degrees; and
- (d) the descent angle from the planned final approach fix (FAF) crossing altitude to the target touchdown point on the runway is not less than 2.9 degrees and not more than 3.5 degrees.

DIVISION IV - AEROPLANE PERFORMANCE OPERATING LIMITATIONS

724.44 Exceptions

The standards for operating an aeroplane without fully complying with Sections 704.45 through 704.50 of the *Canadian Aviation Regulations* are as follows:

(1) Operations from or to Unprepared Surfaces (Propeller-Driven Aeroplanes)

The standard for operating a propeller-driven aeroplane from or to unprepared surfaces, when such operations are not specifically addressed in the Aeroplane Flight Manual is set out in this standard.

(amended 2006/06/30)

The air operator's *Company Operations Manual* shall set out the program for operations involving unprepared surfaces. This program shall include:

- (a) prior to serving as the pilot-in-command during operations from unprepared strips a pilot shall have:
- (i) at least 100 hours on type;
 - (ii) completed a course of ground and flight training covering topics such as take-off and landing surface characteristics, obstacle assessment and interpretation of pertinent aeroplane data;
 - (iii) completed at least 25 hours of line indoctrination involving unprepared strip operations; and
 - (iv) been certified by the Chief Pilot or his/her delegate as qualified for operations involving unprepared strips. A copy of this certification shall be placed on the pilot's training file;

- (b) procedures for company operational approval for unprepared strip operations; and
- (c) procedures for assessing and operating from/to unprepared surfaces and unfamiliar approach and departure routes.

(2) Dispatch Limitations

Landing at Destination and Alternate Aerodromes (Propeller-Driven Aeroplanes)

(a) Destination Aerodrome Runway Factors

Propeller-Driven Aeroplanes Using Reverse Thrust

The standard for dispatching a propeller-driven aeroplane equipped with reverse thrust when its landing weight at destination will allow a full-stop landing within 80 percent of the Landing Distance Available (LDA) is:

- (i) approach speed for the estimated weight, flap setting and ambient conditions expected on arrival shall not exceed 100 KIAS;
- (ii) reverse thrust shall be serviceable and the runway surface conditions shall permit the use of full rated reverse thrust (i.e. no FOD risk);
- (iii) the runway surface is forecast to be bare and dry at the time of arrival;
- (iv) the flight crew shall have completed specific training on short-field landing techniques on that particular type of aeroplane within the 12 months preceding the flight; and
- (v) obstacle clearance shall not require an approach angle steeper than 3 degrees or threshold crossing height greater than 50 feet.

NOTE:

This is an obstacle clearance requirement and is not intended to affect the operation of the aircraft.

(b) Alternate Aerodrome Runway Factors

Propeller-Driven Aeroplanes Using Reverse Thrust

The standard for dispatching a propeller-driven aeroplane equipped with reverse thrust when its landing weight at the alternate will allow a full-stop landing within 80 percent of the Landing Distance Available (LDA) is:

- (i) approach speed for the estimated weight, flap setting and ambient conditions expected on arrival shall not exceed 100 KIAS;
- (ii) reverse thrust shall be serviceable and the runway surface conditions shall permit the use of full rated reverse thrust (i.e. no FOD risk);
- (iii) the runway surface is forecast to be bare and dry at the time of arrival;

(iv) the crew shall have completed specific training on short-field landing techniques on that particular type of aeroplane within the 12 months preceding the flight; and

(v) obstacle clearance shall not require an approach angle steeper than 3 degrees or threshold crossing height greater than 50 feet.

NOTE:

This is an obstacle clearance requirement only and is not intended to affect the operation of the aircraft.

(3) Operations from or to Gravel Runways (Propeller-Driven Aeroplanes)

(amended 2006/06/30)

The standard for operating a propeller-driven aeroplane from or to a gravel runway, when such operations are not specifically addressed in the Aeroplane Flight Manual, a Supplement to the Aeroplane Flight Manual, or in data from another source that is acceptable to the Minister, is set out in this standard.

(amended 2006/06/30)

(a) The air operator's *Company Operations Manual* shall set out the program for operations from or to gravel runways. This program shall include:

(i) procedures for company operational approval for gravel runway operations; and

(ii) procedures for operation from or to gravel runways.

(b) Prior to serving as pilot-in-command for operations from and to gravel runways a pilot shall have:

(i) received ground training to include the characteristics of the take-off and landing surfaces, obstacle assessment, and proficiency in company procedures;

(ii) conducted, within the previous two years, a minimum of one take-off and landing on gravel runways, in the type of aeroplane to be operated; and

(iii) been certified by the Chief Pilot as being competent to conduct operations from and to gravel runways.

(c) For aeroplanes with a Maximum Certified Take-Off Weight (MCTOW) greater than 5 700 kg (12,566 lb) a factor of 15% will be added to the dry hard surface performance data for determination of Take-Off Distance Required (TODR), Accelerate-Stop Distance Required (ASDR) and Landing Distance Required (LDR). No credit for reverse thrust may be used in the calculation of ASDR and LDR. Up to 5000 feet of dry hard surface runway data may be used in calculating the factor, and no credit may be applied for clearway.

(d) For aeroplanes with a MCTOW equal to or less than 5 700 kg (12,566 lb) a factor of 10% will be added to the dry hard surface performance data for determination of TODR, ASDR and LDR. No credit for reverse thrust may be used in the calculation of ASDR and LDR. Up to 5000 feet of dry hard surface runway data may be used in calculating the factor, and no credit may be applied for clearway.

724.46 Take-off Weight Limitations

(1) Relief from Accelerate-stop Distance Requirements

The standards for conducting a take-off in an aeroplane that is propeller-driven without demonstrating that Accelerate-Stop Distance Required does not exceed Accelerate-Stop Distance Available are:

(amended 2006/06/30)

(a) the air operator shall comply with all take-off weight limitations set out in the aircraft flight manual; and

(b) the air operator meets one or more of the following conditions:

(i) prevents more than 9 passenger seats from being occupied,

(ii) uses an aeroplane with a MCTOW of 5 700 kg (12,566 lb) or less and is being operated on demand, or

(amended 2006/06/30)

(iii) until December 20, 2010, uses an aeroplane with a MCTOW of 5 700 kg (12,566 lb) or less.

(amended 2006/06/30)

(2) Relief from Engine-out Take-off Distance Requirements

The standard for operating a large propeller-driven aeroplane where the Take-off Distance Required in the event of an engine failure on take-off exceeds the Take-off Distance Available is as follows:

(i) the air operator shall comply with all takeoff weight limitations set out in the approved flight manual for the aeroplane; and

(ii) the air operator shall prevent more than 9 passenger seats from being occupied.

724.47 Net Take-off Flight Path

(1) Turbo-jet on Demand Operations

The standard for conducting a take-off during an on demand operation using a turbo-jet-powered aeroplane without demonstrating that the Net Take-off Flight Path provides obstacle clearance is as follows:

- (a) the air operator shall comply with all take-off weight limitations set out in the aircraft flight manual;
- (b) the airport elevation shall not exceed 4000 feet ASL;
- (c) the Take-off Run Available (TORA) shall be greater than or equal to 1.5 times the Take-off Distance Required in accordance with section 704.46 of the *Canadian Aviation Regulations*; and
- (d) ceiling and visibility shall be at or above the landing minima for the runway in use.

(2) Aeroplanes Certified to sFAR 41 - Special Conditions

The standard for conducting a take-off using a large propeller-driven aeroplane without demonstrating that the Net Take-off Flight Path provides obstacle clearance is as follows:

- (a) the aeroplane is certified in accordance with sFAR 41 and is being used in an on demand operation; or
- (b) until December 20, 2010, is certified in accordance with sFAR 41.

(3) Propeller-Driven Large Aeroplanes - General Conditions

(a) The standard for operating a large propeller-driven aeroplane when obstacle avoidance is not assured in the event of an engine failure during takeoff is as follows:

- (i) the air operator shall prevent more than 9 passenger seats from being occupied; and
- (b) The standard for determining Net Take-off Flight Path when visual obstacle avoidance is possible is as follows:

(i) Obstacle Assessment

(A) The air operator shall obtain the best available data concerning obstacles in the proposed takeoff path. Transient obstacles (such as construction equipment or moored watercraft, etc.) shall be considered when they are estimated to lie within 300 feet of the centre line of the proposed take-off path; and

(B) Where the precise height, bearing and distance of an object is not known (such as objects depicted on a topographical map), the air operator shall use a reasonable estimate for performance calculations. Calculations shall clearly indicate where estimated information is used; and

(ii) Departure Planning

(A) The Operations Manager or his/her delegate shall establish a company engine-out departure plan using procedures set out in the *Company Operations Manual*, but including at least the following:

- (I) obstacle assessment;
- (II) aeroplane performance, including turn radii; and
- (III) visual reference points to be used during the departure route; and

NOTE:

In all cases the operator shall retain the departure plan for audit purposes.

(B) Prior to commencing a take-off, the pilot-in-command shall, in consideration of the current winds, density altitude and aeroplane weight, satisfy himself or herself that the departure plan to be followed in the event of an engine failure on take-off avoids all obstacles in the departure path by either 35 feet vertically or 300 feet horizontally.

**DIVISION V - AIRCRAFT EQUIPMENT
REQUIREMENTS**

There are no associated Standards for this division

DIVISION VI - EMERGENCY EQUIPMENT

724.84 *Equipment Standards and Inspection*

(1) Survival Equipment - Flights Over Land

For flights over land the following standard shall be met:

- (a) the *Company Operations Manual* shall show how compliance with Section 602.61 of the *Canadian Aviation Regulations* is to be achieved;
- (b) a list of survival equipment shall be carried on board with information on how to use it;
- (c) a survival manual, appropriate for the season and climate, shall be carried on board; and
- (d) crew members shall be trained in accordance with section 724.115 of the *Commercial Air Services Standards*

(2) Survival Equipment - Flights Over Water

Where life rafts are required to be carried, in accordance with Section 602.63 of the *Canadian Aviation Regulations* they shall be equipped with an attached survival kit containing at least the following:

- (a) a pyrotechnic signalling device;
- (b) a radar reflector;
- (c) a life raft repair kit;
- (d) a bailing bucket and sponge;
- (e) a signalling mirror;
- (f) a whistle;
- (g) a raft knife;
- (h) an inflation pump;
- (i) a dye marker;
- (j) a waterproof flashlight;
- (k) a two day supply of water, calculated using the overload capacity of the raft, consisting of one pint of water per day for each person or a means of desalting or distilling salt water sufficient to provide an equivalent amount;
- (l) a fishing kit;
- (m) a book on sea survival; and
- (n) a first aid kit containing antiseptic swabs, burn dressing compresses, bandages and anti-motion sickness pills.

(3) First Aid Kits

For the purposes of section 704.84 of the *Canadian Aviation Regulations*, a first aid kit required by section 602.60 of the *Canadian Aviation Regulations* shall contain the supplies and equipment for a Type A kit set out in Part X, Schedule II of the *Aviation Occupational Safety and Health Regulations*. In addition, each kit shall contain one pair of protective non-permeable gloves made of latex or equivalent material.

(amended 2001/06/01)

DIVISION VII - PERSONNEL REQUIREMENTS**724.108 *Flight Crew Member Qualifications*****(1) Pilot Proficiency Check**

(a) The pilot proficiency check (PPC) in an aeroplane shall be conducted in accordance with Schedule I or Schedule II of this section.

(b) A pilot proficiency check shall be conducted in a manner that enables the pilot to demonstrate the knowledge and skills respecting:

- (i) the air operator's aeroplane, its systems and components;
- (ii) proper control of airspeed, direction, altitude, attitude and configuration of the aeroplane, in accordance with normal, abnormal and emergency procedures and limitations set out in the aeroplane flight manual, aeroplane operating manual (where applicable), the air operator's standard operating procedures, the check list, and any other information relating to the operation of the aeroplane type;
- (iii) departure, enroute and arrival instrument procedures (if applicable) and other applicable procedures; and
- (iv) adherence to approved procedures.

(c) For turbo-jet aircraft, initial and recurrent Pilot Proficiency Checks shall be conducted on a combination of a flight training device certified in accordance with the *Aeroplane and Rotorcraft Simulator Manual* to Level 4 or higher and a full flight simulator; or, a combination of a flight training device certified to level 6 or higher and the aeroplane. Where a synthetic flight training device is not available in North America the required training may be conducted in the aeroplane.

(d) For pressurized turbo-prop aircraft, Transport Canada encourages carriers to conduct training on the simulator, or to use a combination of training in an FTD and the aeroplane.

(e) The synthetic flight training device level of training and checking credits shall be approved by Transport Canada in the training program approval process for each aeroplane type. Training and checking procedures not approved for the synthetic flight training device shall be completed in the aeroplane. The configuration of the flight training device shall closely resemble that of the aeroplane used by the air operator.

(f) A proficiency check of a pilot-in-command shall be completed in the seat normally occupied by the pilot-in-command and a check of a second-in-command shall be completed in the seat normally occupied by the second-in-command. The pilot proficiency check shall consist of a demonstration of both pilot flying (PF) duties and pilot not flying (PNF) duties.

(g) The PPC shall not be conducted as an isolated group of emergency procedures and drills. Rather it shall be constructed with minimum disruption in a logical continuous flow reflecting a normal flight profile. Normally the PPC is a pre-programmed activity, however, the person conducting the check may require any manoeuvre or procedure from the appropriate Schedule, necessary to determine the proficiency of the crew and to confirm that the crew can operate the aeroplane safely.

(h) A PPC shall include a demonstration of instrument flight (IF) proficiency if:

(i) the candidate possesses a valid Instrument Rating; and

(ii) the candidate conducts commercial IFR operations on the aeroplane in which the PPC is conducted.

(i) Where a pilot successfully completes the full PPC, the pilot successfully completes the flight check requirements for the renewal of the applicable instrument rating.

(2) Aeroplane Grouping for PPC Purposes

Where an air operator has been authorized aeroplane grouping for PPCs (renewal only) the following standard shall apply.

(a) for a pilot to commence participating in an air operator's authorized aeroplane grouping that pilot shall have passed within the preceding 24 months, in each type of aeroplane in which that pilot will act as a flight crew member, the PPC set out in Schedule I or Schedule II of this section;

(amended 2006/06/30)

(b) the pilot must complete initial and annual recurrent ground and flight training, including written examinations on systems and limitations, for each type of aeroplane in which he/she will serve as a crew member;

(c) the annual PPC shall be conducted by an approved check pilot or a Department of Transport Inspector and passed on one of the aeroplane types from the authorized group. A different type of aeroplane from the group shall be used each successive year for the conduct of the PPC;

(d) a failure to pass the PPC on the selected aeroplane type shall be considered to be a failure on all the aeroplane group types flown by that pilot; and

(e) the document certifying qualifications and proficiency shall be endorsed for each aeroplane type.

NOTE:

Grouping of PPC's (renewal only) is considered transportable from one air operator to another if the hiring operator has been authorized for grouping of the same aircraft types. The pilot must complete the hiring air operators recurrent ground and flight training for each type on which he/she intends to serve as a crew member. The training shall be completed to the extent required to demonstrate competency to the air operators training pilot. Initial training and a PPC are required for any type on which the pilot is not current or has not previously served (see section 724.111 - Validity Period).

(3) Use of other than an Air Operator Employee Pilot for Training and Checking

Authority may be given for other than an air operator employee pilot to occupy a flight crew seat when training, conducting line indoctrination training, and while the air operator first flight crews are completing the minimum flight time requirements on a new aeroplane type.

The pilot shall:

- (a) provide a resume, proof of background on the type of aeroplane, and recent experience appropriate to the training to be given; and
- (b) hold the appropriate licence, ratings and endorsements. Where the pilot holds a foreign pilot licence the licence and (as applicable) the instrument rating shall be validated by Transport Canada.

The pilot may be authorized to conduct pilot checks provided the requirements of the *Company Check Pilot Manual*, are met with exception of the minimum employment time with the air operator.

A foreign licensed pilot may be granted authority for training and checking only when a Canadian licensed pilot is not available.

During revenue flights foreign licensed pilots shall not replace Canadian flight crew members, they can only be supplemental flight crew for required training.

SCHEDULE I - Pilot Proficiency Check (PPC)**Synthetic Flight Training Device****(1) Pre-flight Phase****Flight Planning and Equipment Examination**

(a) Flight planning shall include a practical examination on the crew's knowledge of air operator's approved Standard Operating Procedures and the Aeroplane Flight Manual including aeroplane and runway performance charts, and weight and balance procedures.

(b) The equipment examination shall consist of a display of practical knowledge of the airframe, engine, major components and systems including the normal, abnormal and emergency operating procedures and limitations relating thereto.

(c) The practical flight planning examination and equipment examination are optional when the pilot's training records contain copies of valid written examinations, from initial or annual training.

(amended 2000/12/01)

(2) Flight Phase**(a) Taxiing**

(i) the use of the taxiing check list;

(ii) taxiing in compliance with clearances and instructions issued by the person conducting the pilot proficiency check; and

(iii) where a second-in-command is undergoing the pilot proficiency check, outlined above to the extent practicable from the second-in-command position.

(b) Engine Checks

Engine checks shall be conducted as appropriate to the aeroplane type.

(c) Take-off

(i) one normal take-off to be performed in accordance with the Airplane Flight Manual;

(ii) an instrument take-off in the minimum visibility approved for the air operator;

(iii) a take-off in a minimum of a 10 kt crosswind component;

NOTE:

Any or all of the above takeoffs may be combined.

(iv) a take-off with failure of the critical engine at a speed greater than V₁ and at an altitude of less than 50 feet AGL; or at a speed as close as possible to, but greater than V₁ when V₁ and V₂, or V₁ and V_r are identical; and

(amended 2005/06/01)

(v) a rejected take-off from a speed not less than 90% of the calculated V1 or less as appropriate to the aeroplane type.

(d) Instrument Procedures

Instrument procedures shall consist of IFR pre-flight preparations, terminal and enroute procedures, arrival and departure procedures, system malfunctions and, where applicable, the proper programming and use of Flight Management Systems (as applicable).

(i) An area departure and an area arrival procedures shall be performed where the crew:

(A) adheres to air traffic control clearances and instructions; and

(B) properly uses the available navigation equipment and facilities;

(ii) a holding procedure;

(iii) at least two instrument approaches performed in accordance with procedures and limitations in the *Canada Air Pilot* or in the equivalent foreign publication, or approved company approach procedure for the facility used. One of the approaches shall be a precision approach, and one a non precision approach; and

(iv) where the flight crew is authorized to conduct circling approaches in accordance with the company operations manual, one approach and manoeuvre to land using a scene approved for circling and demonstrated during an initial qualification check and annually thereafter.

(amended 2000/12/01)

(e) Manoeuvres

(i) At least one steep turn in each direction with a bank angle of 45° and a change in heading of at least 180° but not more than 360°;

(ii) Approaches to stalls

For the purpose of this manoeuvre the required approach to a stall is reached when there is a perceptible buffet or other response to the initial stall entry.

The following approaches to the stall are required during initial and upgrade PPC's:

(A) one in the take-off configuration, except where a zero-flap take-off configuration is normally used in that model and type of aeroplane;

(B) one in a clean configuration; and

(C) one in a landing configuration.

One of the approaches to stall shall be performed while in a turn with a bank angle of between 15° and 30°.

(iii) Steep turns and approach to stalls are not required when the PPC is conducted using either a LOFT scenario, a scripted PPC or a fly-by wire aeroplane; and
(amended 2000/12/01)

(A) for an initial PPC on aeroplane type, steep turns and approach to stalls have been satisfactorily demonstrated during initial training;

(B) for a semi-annual or an annual PPC:

(I) steep turns and approach to stalls that are required in the applicable annual training syllabus have been satisfactorily demonstrated during this training; or

(II) steep turns and approach to stalls are not required in the applicable annual training syllabus.

(f) Landings and Approaches to Landings

(i) one normal landing;

(ii) one landing from an approach in Instrument Meteorological Conditions (IMC) not greater than the minimum recommended for the approach;

(iii) one crosswind landing with a minimum of a 10 kt crosswind component;

(iv) one landing and manoeuvre to that landing with a failure of 50 percent of the available engines which shall be on one side of the aeroplane for the pilot-in-command and the outboard engine only for other than the pilot-in-command. Where the aeroplane type is a three engine aeroplane, the loss of power shall be the centre engine and one other engine for the pilot-in-command and an outboard engine for other than the pilot-in-command. For three and four engine aeroplanes the pilot-in-command is required to perform a two engine inoperative procedure during the initial qualification check and annually thereafter;

(v) one rejected landing and one missed approach. For the purposes of the rejected landing the landing shall be rejected at a height of approximately 50 feet when the aeroplane is approximately over the runway threshold. The rejected landing may be combined with a missed approach;

(amended 2005/06/01)

(vi) one Category II or Category III approach where these procedures are authorized in an Air Operator Certificate. Required during the initial qualification flight and annually thereafter; and

(vii) where applicable, one landing without the use of an auto-land system.
(amended 2000/12/01)

NOTE:

Any of the landings and approaches to landings specified in this section may be combined. A minimum of two landings are required.

(g) Normal Procedures

The crew shall demonstrate use of as many of the air operator's approved Standard Operating Procedures, normal procedures for installed systems, devices and aids as is necessary to confirm that the crew has the knowledge and ability to properly use installed equipment, including the auto-pilot and hand flown manoeuvres as appropriate.

(h) Abnormal and Emergency Procedures

(i) The crew shall demonstrate use of as many of the air operator's approved Standard Operating Procedures and abnormal and emergency procedures for as many of the situations as is necessary to confirm that the crew has an adequate knowledge and ability to perform these procedures.

(ii) System malfunctions shall consist of a selection adequate to determine that the crew has satisfactory knowledge and ability to safely handle malfunctions.

(iii) At least two simulated engine failures excluding failures on the runway followed by a rejected take-off, at any time during the check.

(amended 2000/12/01)

(i) Where the PPC is conducted following initial training in a level A or B training program, the following flight checking is required within 30 days after the PPC in a synthetic flight training device, and may be performed concurrently with the flight training requirements on the aeroplane type in the applicable training program:

(amended 1999/09/01)

(i) interior and exterior aeroplane pre-flight checks;

(ii) ground handling for pilots-in-command;

(iii) normal take-off, visual circuit where possible, and landing;

(iv) a simulated engine inoperative approach and landing;

(v) simulated engine failure procedures during take-off and missed approach to be conducted at a safe altitude and at no less than $V_2 + 10$ airspeed;

(amended 2000/12/01)

(vi) no electronic glide slope approach and landing; and

(vii) a circling approach, if a circling approach could not be simulated in the synthetic training device.

(amended 2000/12/01)

SCHEDULE II - Pilot Proficiency Check (PPC) - Aeroplane

(1) Pre-flight Phase

(a) Flight Planning and Equipment Examination

(i) Flight planning shall include a practical examination on the crew's knowledge of air operator's approved Standard Operating Procedures and the Aeroplane Flight Manual including aeroplane and runway performance charts, and weight and balance procedures.
(amended 2000/12/01)

(ii) The equipment examination shall consist of a display of practical knowledge of the airframe, engine, major components and systems including the normal, abnormal, and emergency operating procedures and limitations relating thereto.
(amended 2000/12/01)

(iii) The practical flight planning examination and equipment examination are optional when the pilot's training records contain copies of valid written examinations, from initial or annual training.
(amended 2000/12/01)

(b) Aeroplane Inspection

A pre-flight aeroplane inspection that includes:

- (i) a visual inspection of the exterior and interior of the aeroplane, locating each item to be inspected and explaining the purpose of the inspection;
- (ii) the proper use of the pre-start, start and pre-taxi check lists; and
- (iii) checks of the appropriate radio communications, navigation and electronic equipment and selection of the appropriate communications and navigation frequencies prior to flight.

(2) Flight Phase

(a) Taxiing

- (i) taxiing procedures;
- (ii) a taxiing check including:
 - (A) the use of the taxiing check list;
 - (B) taxiing in compliance with clearances and instructions issued by the appropriate air traffic control unit or by the person conducting the pilot proficiency check; and
 - (C) where a second-in-command is undergoing the pilot proficiency check, the taxiing check outlined above to the extent practicable from the second-in-command position.

(b) Engine Checks

Engine checks shall be conducted as appropriate to the aeroplane type.

(c) Take-off

- (i) One normal take-off to be performed in accordance with the Airplane Flight Manual or where the aeroplane is a turbo-jet, a noise abatement take-off performed in accordance with the Airplane Flight Manual (where applicable) and the *Canada Air Pilot*.
- (ii) An instrument take-off performed in the same manner as the normal take-off except that instrument flight rules are simulated at or before reaching an altitude of 200 feet above the airport elevation. Not required to be demonstrated where the Air Operator's Certificate authorizes operations under day VFR only, or the air operator assigns the pilot to day VFR flight only.
- (iii) Where practicable under existing meteorological, airport or airport traffic conditions, one crosswind take-off performed in accordance with the aeroplane operating manual where applicable.

NOTE:

Any or all of the above take-offs may be combined.

- (iv) a simulated engine failure after take-off at a safe altitude and no lower than $V_2 + 10$ airspeed and appropriate to the aeroplane type under the prevailing conditions, or if V speeds are not published in the Aeroplane Flight Manual, as close to the take-off safety speed as is safe and appropriate to the aeroplane type under the prevailing conditions.
(amended 2000/12/01)

- (v) a rejected take-off explained by the candidate prior to the flight.

(d) Instrument Procedures

Except where an Air Operator Certificate authorizes operations under day VFR only, or the air operator assigns the pilot to day VFR flights only, instrument procedures shall consist of IFR pre-flight preparation, departure and enroute procedures, terminal procedures and system malfunctions:

- (i) an area departure and an area arrival procedure shall be performed where the pilot:
 - (A) adheres to actual or simulated air traffic control clearances and instructions; and
 - (B) properly uses the available navigation facilities;
- (ii) a holding procedure;
- (iii) at least two instrument approaches performed in accordance with procedures and limitations in the *Canada Air Pilot* or the equivalent foreign publication, or approved company approach procedure for the approach facility used. Where practicable one of the approaches shall be a precision approach and one a non-precision approach; and

(iv) where the flight crew is authorized to conduct circling approaches in accordance with the company operations manual, a circling approach shall be demonstrated during an initial qualification check and annually thereafter, except when local conditions prevent such approach from being performed.

(amended 2000/12/01)

(e) In Flight Manoeuvres

(i) at least one steep turn in each direction with a bank angle of 45° and a change in heading of at least 180° but not more than 360°;

(ii) Recoveries from impending or full stalls

(amended 2000/12/01)

For the purpose of this manoeuvre, the required recovery from a stall is initiated when there is a perceptible buffet or other response to the initial stall entry. When performed in an aeroplane the approach to stalls shall be conducted at an altitude of at least 5000 feet AGL, and if conducted above cloud at an altitude of at least 2000 feet above the cloud tops.

(amended 2000/12/01)

The following approaches to the stall are required during initial and upgrade PPC's:

(A) one in the take-off configuration, except where a zero-flap take-off configuration is normally used in that model and type of aeroplane;

(B) one in a clean configuration; and

(C) one in a landing configuration.

One of the approaches to stall may be performed while in a turn with a bank angle of between 15° and 30°;

(f) Landings and Approaches to Landings

(i) one normal landing which shall, where practicable, be conducted without external or internal glideslope information;

(ii) one landing from an instrument approach, and where prevailing conditions prevent an actual landing, an approach to a point where a landing could have been made. Not required to be demonstrated where the Air Operator's Certificate authorizes operations under day VFR only, or the air operator assigns the pilot to day VFR flights only;

(iii) one cross wind landing where practicable under existing meteorological, airport and airport traffic conditions;

(iv) one landing and manoeuvring to that landing with a simulated failure of 50 percent of the available engines which shall be on one side of the aeroplane for the pilot-in-command and on outboard engine only for other than the pilot-in-command.

Where the aeroplane type is a three engine aeroplane, the loss of power shall be an outboard engine and the centre engine for the pilot-in-command and on outboard engine for other than the pilot-in-command. For three and four-engine aeroplanes the pilot in command is required to perform a two-engine inoperative procedure during initial qualification check and annually thereafter; or

(v) one landing under simulated circling approach conditions except that where prevailing conditions prevent a landing, an approach to a point where a landing could have been made.

NOTE:

Any of the landings and approaches to landings specified in this section may be combined. A minimum of two landings are required.

(g) Normal Procedures

The crew shall demonstrate use of as many of the air operator's approved Standard Operating Procedures, and normal procedures as is necessary to confirm that the crew has the knowledge and ability to properly use installed equipment, (auto-pilot and hand flown manoeuvres as appropriate).

(h) Abnormal and Emergency Procedures

(i) The crew shall demonstrate use of as many of the air operator's approved Standard Operating Procedures and abnormal and emergency procedures for as many of the emergency situations as is necessary to confirm that the crew has an adequate knowledge and ability to perform these procedures.

(ii) System malfunctions shall consist of a selection adequate to determine that the crew has satisfactory knowledge and ability to safely handle malfunctions.

(iii) At least two simulated engine failures excluding failures on the runway followed by a rejected take-off, at any time during the check.

(amended 2000/12/01)

SCHEDULE III - Authorized Grouping for PPC Purposes

(amended 2000/06/01)

Aircraft Manufacturer	Type
Aero Commander/IAI	1121, 1123 and 1124 Jet Commander and Westwind Models
Beechcraft	99 , 100 and A100 Models
Beechcraft	100, A100, 200 and B200 Models
Beechcraft	200, B200, 300, 350 and 1900C Models (amended 2000/12/01)
British Aerospace	Jetstream 3100 and 3200 Series
British Aerospace	HS 125 - All Viper Engine Driven
British Aerospace	HS 125 - All Retrofit to FAN Engines
British Aerospace	HS 125 – 700 and 800 Series
Cessna	500, 501, 550 and 551 Models
Cessna	550, 551 and 560 Models
Cessna	650 All Models
Dassault	Falcon 50 and Falcon 900 (amended 2000/12/01)
Lear	23, 24 and 25 Models
Lear	35, 36 and 55 Models
Lockheed Jetstar	I, II and 731 Models
Saberliner	40, 60 and 75 Models
Swearingen/Fairchild (amended 2000/12/01)	SA226AT (Merlin IV and IVA), SA226TC (Metro and Metro II) (amended 2000/12/01)
Swearingen/Fairchild (amended 2000/12/01)	SA227AT (Merlin IVC), SA227AC (Metro III), Metro 227DC, Metro 227CC (amended 2000/12/01)
Swearingen/Fairchild (amended 2000/12/01)	SA226T, SA226TC and SA226AT
Swearingen/Fairchild (amended 2000/12/01)	All long body SA226 and SA227

Note:

Groupings of aircraft that operate under both CARs 703 and 704 require all training to be done in accordance with Subpart 724 of the Commercial Air Service Standards.

724.109 *Qualifications of Operational Control Personnel*

A person shall successfully complete the training program outlined in subsection 724.115(17) *Flight Follower Training* to qualify for a position in Type C or D operational control system.
(amended 2006/06/30)

Where an air operator chooses to use a Dispatch Release, the flight dispatcher preparing the release shall be fully qualified in accordance with Type A or B Operational Control, section 724.15 *Operational Control Systems* and subsection 725.124(21) *Flight Dispatcher Training* of the *Commercial Air Services Standards - Airline Operations - Aeroplanes*.
(amended 2006/06/30)

724.111 *Validity Period*

(1) Where a flight crew member's training has expired for a period of 24 months or more that crew member shall, successfully complete the air operator's initial training program on the type of aeroplane.

(2) Where the flight crew member's pilot proficiency check has expired for a period of 24 months or more that flight crew member shall, following completion of the air operator's initial aeroplane ground and flight training, successfully complete the initial pilot proficiency check on the type of aeroplane.

DIVISION VIII - TRAINING

724.115 *Training Programs*

The syllabus of each training program shall include the programmed time allotted and the subject matter to be covered.

(1) General Training Standard

(a) manuals, if applicable, shall be provided during training to each trainee on the subject matter to be taught;

(b) relevant training aids such as fire extinguishers, life preservers, rafts, aircraft components, static aircraft, etc. shall be available relevant to the program being presented;
and

(c) comprehensive examinations shall be used to validate competence of the trainee.

(2) Flight Crew Training on a Contract Basis

An air operator may contract crew member training to another organization provided:

- (a) the arrangement is clearly provided for in the approved training program;
- (b) the outside organization uses the manuals and publications used by the air operator (SOP's, Aircraft Flight Manual, Aircraft Operating Manual, if applicable, *Company Operations Manual*, etc.);
- (c) the air operator ensures that the training is conducted in accordance with the approved program;
- (d) where type training is conducted the training is provided on the type and model operated by the air operator unless otherwise provided for in the approved training program; and
- (e) the air operator maintains training records as required by Subpart 704 of the *Canadian Aviation Regulations*.

(3) Training Facilities

Training facilities shall be adequate to ensure that training objectives can be achieved.

Facilities shall be:

- (a) quiet and free of distractions;
- (b) suitably lighted for the type of instructions to be given, e.g. lectures, slides and audio-visual;
- (c) furnished with sufficient desks, chairs, chalkboards and other appropriate equipment; and
- (d) equipped with training aids such as films, Vu-graphs, system components, audio-visual, aeroplane manuals or computer based systems.

(4) Training and Qualifications of Training Personnel**(a) Instructor - Ground Training**

- (i) has satisfied the air operator that he/she has the knowledge and skills required to conduct the training; and
- (ii) if conducting aeroplane type training has successfully completed the ground school for the type of aeroplane.

(b) Qualifications and Responsibilities of a Training Pilot (Flight)**(i) Qualifications**

(A) The training pilot shall:

(amended 2006/06/30)

(I) where VFR only is authorized by the air operator certificate, hold a valid Airline Transport Pilot Licence (Aeroplane) or a valid Commercial Pilot Licence (Aeroplane) appropriate for the aeroplane on which training will be given; (amended 2006/06/30)

(II) where Night VFR is authorized by the air operator certificate, hold a valid Airline Transport Pilot Licence (Aeroplane) or a Commercial Pilot Licence (Aeroplane), valid for night, and a valid Instrument Rating appropriate for the aeroplane on which training will be given; or (amended 2006/06/30)

(III) where IFR is authorized by the air operator certificate, hold a valid Airline Transport Pilot Licence (Aeroplane) and a valid Instrument Rating appropriate for the aeroplane on which training will be given. (amended 2006/06/30)

(B) In addition to the items set out in clause A, the training pilot shall also:

(amended 2006/06/30)

(I) if applicable, hold a type rating for the type of aeroplane on which training will be given;

(amended 2006/06/30)

(II) be qualified in accordance with the air operator's training program to act as pilot-in-command on the type of aeroplane on which training will be given; and (amended 2006/06/30)

(III) know the content of the Aircraft Flight Manual, Aircraft Operating Manual (if applicable), *Company Check Pilot Manual*, Company Operations and Training Manuals and the operator's Standard Operating Procedures for the aeroplane type, and the provisions of the regulations and standards.

(amended 2006/06/30)

(ii) Responsibilities

The Training Pilot is responsible for monitoring the operation and identifying problems which may require the provision of extra training or changes in operational procedures. The training pilot is responsible, together with the Chief Pilot, for the establishment and promulgation of the standards and piloting techniques with which flight crew will be expected to comply during flight operations and which the flight crew will be required to demonstrate during initial and recurrent checks. Particular responsibilities are:

- (A) conducting ground, synthetic flight training device and flight training of all flight crew in accordance with the approved training program;
- (B) supervision of the standards and recommending amendments to their respective aeroplane operating manuals and standard operating procedures;
- (C) maintaining the air operator's training records;
- (D) liaison with crew scheduling concerning training details; and
- (E) any responsibilities assigned by the Chief Pilot.

(c) Qualifications and Responsibility of a Training Pilot (Synthetic flight training device)

(i) Qualifications

- (A) hold or have held an Airline Transport Pilot Licence-Aeroplane or equivalent and an Instrument Rating appropriate for the class of aeroplane;
- (B) have completed the air operator's ground school and synthetic flight training device program for the type of aeroplane;
- (C) have successfully completed within the past 24 months a pilot proficiency check in the synthetic flight training device or aeroplane for that type;
(amended 2006/06/30)
- (D) know the content of the Aeroplane Operating Manual (if applicable), Aeroplane Flight Manual, Operations and Training Manuals and as applicable the *Company Check Pilot Manual* and the air operator Standard Operating Procedures for the aeroplane type, and the provisions of the regulations and standards; and
- (E) have received instruction on the operation of the synthetic flight training device from an instructor qualified to operate the synthetic flight training device.

(ii) Responsibilities

The Training Pilot is responsible for monitoring the operation and identifying problems which may require the provision of extra training or changes in operational procedures. The training pilot is responsible, together with the Chief Pilot, for the establishment and promulgation of the standards and piloting techniques with which flight crew will be expected to comply during flight operations and which the flight crew will be required to demonstrate during initial and recurrent checks. Particular responsibilities are:

- (A) conducting ground and synthetic flight training of all flight crew in accordance with the approved training program;
- (B) supervision of the standards and recommending amendments to their respective aeroplane operating manuals and standard operating procedures;
- (C) maintaining the air operator's training records;

- (D) liaison with crew scheduling concerning training details; and
- (E) any responsibilities assigned by the Chief Pilot.

NOTES:

(1) Requirements for the use of other than an air operator employee pilot for training and checking are in section 724.108.

(2) The standard for air operator check pilots are those contained in the Company Check Pilot Manual (as amended). -

(5) Training Program Standards

Ground training programs shall provide a means of evaluating the trainee after completion of the syllabus by completion of examination with a review and correction of any errors. Training examinations should be comprehensive, and periodically reviewed and updated.

Type training programs are to be titled as to the type to which they apply and include the number of instructional hours to be provided. They should be performance oriented and stress the operation (normal, emergency and malfunctions) of the aircraft systems and equipment. Instruction related to components and systems that flight crews cannot control, influence or operate should be minimized.

(6) Company Indoctrination Training

This training is required upon employment for all persons assigned to an operational control function including base managers, pilots and persons responsible for flight watch or flight following. The program shall ensure that persons involved in control of flight operations are aware of their responsibilities, know company reporting relationships and are competent to fulfil their assigned duties related to flight operations. Company indoctrination training shall include as applicable:

- (a) Canadian Aviation Regulations and commuter standards;*
- (b) Air Operator Certificate and operating conditions;*
- (c) company organization, reporting relationships and communication procedures, including duties and responsibilities of flight crew members and the relationship of those duties to other crew members;*
- (d) flight planning and operating procedures;*
- (e) fuelling procedures including procedures for fuelling with passengers on board and fuel contamination precautions;*
- (f) critical surface contamination and safety awareness program;*
- (g) passenger safety briefings and safe movement of passengers to/from the aeroplane;*

- (h) use and status of *Company Operations Manual* including maintenance release procedures and accident/incident reporting procedures;
- (i) use of minimum equipment lists (if applicable);
- (j) windshear, aeroplane icing, and other meteorological training appropriate to the area of operations;
- (k) navigation procedures and other specialized operations applicable to the operator;
- (l) accident/incident reporting;
- (m) passenger on board medical emergency;
- (n) handling of disabled passengers;
- (o) operational control system;
- (p) weight and balance system procedures;
- (q) standard operating procedures (if applicable); and
- (r) pre-flight crew-member briefing.

(7) Technical Ground Training - Initial and Recurrent

This training shall ensure that each flight crew member is knowledgeable with respect to aeroplane systems and all normal, abnormal and emergency procedures. The following subjects shall be included:

- (a) aeroplane systems operation and limitations as contained in the aeroplane flight manual and aeroplane operating manual, and standard operating procedures;
- (b) operation of all equipment that is installed in all aeroplanes of the same type operated by the air operator;
- (c) differences in equipment that is installed in all aeroplanes of the same type in the air operators fleet;
- (d) applicable standard operating procedures for pilot flying and pilot not flying duties for normal, abnormal and emergency procedures for the aeroplane;
- (e) aeroplane performance and limitations; and
- (f) weight and balance procedures.

Technical ground training shall be conducted annually.

(8) Synthetic Flight Training Device

(a) A Synthetic Flight Training Device has two classifications:

- (i) Full flight simulator (FFS); and
- (ii) Flight Training Device (FTD).

(b) For turbo-jet aircraft, initial and recurrent Pilot Proficiency Checks shall be conducted on a combination of a flight training device certified to Level 4 or higher and a full flight simulator or, a combination of a flight training device certified to Level 6 or higher and the aeroplane. Where a synthetic flight training device is not available in North America the required training may be conducted in the aeroplane.

(c) For pressurized turbo-prop aircraft, Transport Canada encourages carriers to conduct training on the simulator, or to use a combination of training in an FTD and the aeroplane.

(9) Level A Training Program (if applicable)

An air operator with an approved Level A training program using an approved Level A or better FFS is permitted to conduct most initial, upgrade and recurrent training in that simulator. Additionally, flight training in an aeroplane must be carried out for general handling and landing manoeuvres for initial and upgrade training.

(a) The following training in standard operating procedures for normal, abnormal and emergency operation of the aeroplane systems and components shall be carried out in the FFS:

- (i) use of aeroplane checklists;
- (ii) flight and cabin crew co-operation, command and co-ordination;
- (iii) aeroplane and cargo fire on the ground and while airborne;
- (iv) engine fire and failure;
- (v) effects of engine icing and anti-ice operations;
- (vi) take-off, landing and flight with the critical engine inoperative including driftdown and engine inoperative performance capabilities;
- (vii) on 3- and 4-engine aeroplanes inflight procedures including approach and landing with 2 engines inoperative (applies to P-I-C only);
- (viii) loss of pressurization and emergency descent (if applicable);
- (ix) flight control failures and abnormalities;
- (x) hydraulic, electrical and other system failures;
- (xi) failure of navigation and communication equipment;
- (xii) pilot incapacitation - recognition and response during various phases of flight;
- (xiii) approach to the stall and recovery procedure with ground contact imminent and ground contact not a factor (clean, take-off and landing configuration);
- (xiv) buffet boundary onset, steep turns (45° of bank), and other flight characteristics such as unusual attitudes (as applicable for initial and upgrade only);

- (xv) aeroplane performance for climb, cruise, holding, descent and landing;
- (xvi) normal, noise abatement and performance limited take-offs;
- (xvii) take-off and landing data calculations;
- (xviii) rejected take-off procedures and rejected landings;
- (xix) passenger and crew evacuation;
- (xx) FMCS, GPWS, TCAS and other specialized aeroplane equipment (where available); and
- (xxi) inadvertent encounters with moderate or severe in flight icing conditions.

(amended 1999/09/01)

(b) Where the air operator seeks authorization for flight in IMC the following training in flight planning and instrument flight procedures shall be included:

- (i) departure, enroute, holding and arrival; and
- (ii) all types of instrument approaches and missed approaches in minimum visibility conditions using all levels of automation available (as applicable).

(c) In addition to the training in an approved Level A FFS Training Program, the following flight training on the aeroplane type shall be carried out:

- (i) interior and exterior aeroplane preflight checks;
- (ii) ground handling for P-I-C;
- (iii) normal take-off, visual circuit (where possible) and landing;
- (iv) a simulated engine inoperative approach and landing;
- (v) simulated engine failure procedures during take-off and missed approach (at safe altitude and airspeed);
- (vi) no electronic glide slope approach and landing; and
- (vii) circling (if applicable) and other approaches where the simulator lacks the capability.

(d) If a Level A flight simulator has differences in performance, systems, or cockpit layout and configuration from the air operator's aeroplane, additional training on these differences shall be provided.

(10) Level B Training Program (if applicable)

An air operator with an approved Level B training program using an approved Level B or better FFS is permitted to conduct most initial, upgrade and recurrent training in that simulator. Additionally, flight training in an aeroplane must be carried out for general handling and landing manoeuvres for initial and upgrade training.

(a) The following training in standard operating procedures for normal, abnormal and emergency operation of the aeroplane systems and components shall be carried out in the FFS:

- (i) use of aeroplane checklists;
- (ii) flight and cabin crew co-operation, command and co-ordination;
- (iii) aeroplane and cargo fire on the ground and while airborne;
- (iv) engine fire and failure;
- (v) effects of engine icing and anti-ice operation;
- (vi) take-off, landing and flight with critical engine inoperative including driftdown and engine inoperative performance capabilities;
- (vii) on 3- and 4-engine aeroplanes inflight procedures including approach and landing with 2 engines inoperative (applies to P-I-C only);
- (viii) loss of pressurization and emergency descent (is applicable);
- (ix) flight control failures and abnormalities;
- (x) hydraulic, electrical and other system failures;
- (xi) failure of navigation and communication equipment;
- (xii) pilot incapacitation - recognition and response during various phases of flight;
- (xiii) recovery from turbulence and windshear on take-off and approach;
- (xiv) approach to the stall and recovery procedure with ground contact imminent and ground contact not a factor (in clean, takeoff and landing configuration);
- (xv) buffet onset boundary, steep turns (45° bank), and other flight characteristics such as unusual attitudes (as applicable for initial and upgrade only);
- (xvi) aeroplane performance for climb, cruise, descent and landing;
- (xvii) normal, noise abatement and performance limited take-offs;
- (xviii) take-off and landing data calculations;
- (xix) rejected take-off procedures and rejected landings;
- (xx) passenger and crew evacuation;

(xxi) FMCS, GPWS, TCAS and other specialized aeroplane equipment (as applicable);
and

(xxii) inadvertent encounters with moderate or severe in flight icing conditions.

(amended 1999/09/01)

(b) Where the air operator seeks authorization for flight in IMC, the following training in flight planning and instrument flight procedures shall be included:

(i) departure, enroute, holding and arrival; and

(ii) all types of instrument approaches and missed approaches in minimum visibility conditions using all levels of automation available (as applicable).

(c) In addition to the training in an approved Level B Simulator Training Program, the following flight training on the aeroplane type shall be carried out:

(i) interior and exterior aircraft preflight checks;

(ii) ground handling for the P-I-C;

(iii) normal take-off, visual circuit (where possible) and landing;

(iv) a simulated engine inoperative approach and landing;

(v) simulated engine failure procedures during take-off and missed approach, (at a safe altitude and airspeed);

(vi) no electronic glide slope approach and landing; and

(vii) circling (if applicable) and other approaches where the simulator lacks the capability.

(d) If a Level B flight simulator has differences in performance, systems, or cockpit layout and configuration from the air operator's aeroplane additional training on these differences shall be provided.

(10.1) Level C Training Program (if applicable)

(amended 2000/12/01)

(a) For the purpose of this provision, "similar aeroplane" means both aeroplanes are subject to Subpart 704 and are

(i) turbo-jet to turbo-jet - provided both are certified as Transport Category Aeroplanes,

(ii) turbo-prop to turbo-prop - provided both aeroplanes are certified as Transport Category Aeroplanes, or both aeroplanes are certified under FAR 23 Commuter or SFAR 41C or equivalent, or

(iii) reciprocating to reciprocating - provided both are certified for operations under Subpart 704;

(b) An air operator with an approved Level C training program using a Level C FFS approved in accordance with the *Aeroplane and Rotorcraft Simulator Manual* is permitted zero flight time training for candidates on initial training who have at least second-in-command experience on a similar aeroplane with the same operator or who have verifiable line currency as a second-in-command on a similar aeroplane within the previous two years. Candidates who do not qualify shall undergo aeroplane flight training in accordance with those items listed in subparagraphs 724.115(9)(c)(i-vii) above;

(c) In addition to those items of training required in paragraphs 724.115(9)(a) and (b), the training in an approved Level C flight simulator shall include

- (i) manoeuvring of the aeroplane on the ground,
- (ii) crosswind take-offs and landings to 100% of the published crosswind component,
- (iii) a visual training program in the flight simulator to ensure VFR flight skills, covering scenarios of dusk and night with variable weather and visibilities. This program shall include

(A) normal and crosswind take-offs, visual circuits and landings with variable wind, runway illusion and surface conditions,

(B) engine inoperative approach and landing,

(C) engine failure procedures during take-off and missed approach,

(D) no electronic glideslope approach and landing, and

(E) approaches and landings with flight control failures and abnormalities;

- (iv) a simulated line flight comprising at least 2 sectors (one as pilot flying and another as pilot not flying);

(d) If a Level C flight simulator has differences in performance, systems, or cockpit layout and configuration from the air operator's aeroplane, additional training on these differences shall be provided.

(10.2) Level D Training Program (if applicable)

(amended 2000/12/01)

(a) An air operator with an approved Level D training program using a Level D FFS approved in accordance with the *Aeroplane and Rotorcraft Simulator Manual* is permitted zero flight time training;

(b) In addition to the training required for a Level C program, the following FFS training shall be carried out:

- (i) A VFR training program in the Level D flight simulator of at least 4 hours per crew (2 hours as pilot flying and 2 hours of pilot not flying) is required, to ensure visual flight

skills to cover either day or dusk and night with variable weather and visibility scenarios. This program shall include the following:

- (A) normal and crosswind take-offs, and visual circuits and landings, with variable wind, runway illusion and surface conditions,
- (B) engine inoperative approach and landing,
- (C) engine failure procedures during take-off and missed approach,
- (D) no visual aids approaches and landings, and
- (E) approaches and landings with flight control failures and abnormalities;

NOTE:

Where a pilot demonstrates a satisfactory level of performance in visual manoeuvres, the operator may use the time specified in subparagraph 724.115(10.2)(b)(i) as additional training to that required by any of the Level C requirements.

(ii) Simulated line flights of at least 2 sessions (2 sectors as pilot flying and 2 sectors as pilot not flying) are required. Pilot flying duties shall be carried out from the appropriate seat.

(c) If a Level D flight simulator has differences in performance, systems, or cockpit layout and configuration from the air operator's aeroplane, additional training on these differences shall be provided.

(11) Aeroplane Only Flight Training Program

Any simulated failures of aeroplane systems shall only take place under operating conditions which do not jeopardize safety of flight.

(a) Standard Operating Procedures for normal, abnormal and emergency operation of the aeroplane systems and components including:

- (i) use of aeroplane checklists including interior and exterior pre-flight checks;
- (ii) manoeuvring of the aeroplane on the ground;
- (iii) aspects of flight and cabin crew co-operation, command and co-ordination;
- (iv) normal take-off, visual circuit, approach and landing;
- (v) simulated aeroplane and cargo fire on the ground and while airborne;
- (vi) simulated engine fire and failure;
- (vii) briefings on effects of airframe and engine icing and anti-ice operation;
- (viii) take-off, landing and flight with the critical engine simulated inoperative, including driftdown and engine inoperative performance capabilities;

- (ix) on 3- and 4-engine aeroplanes inflight procedures including approach and landing with 2 engines simulated inoperative (applies to P-I-C only);
 - (x) simulated loss of pressurization and emergency descent;
 - (xi) no electronic glide slope approach and landing;
 - (xii) simulated hydraulic, electrical and other system failures;
 - (xiii) simulated flight control failures and degraded states of operation, while in-flight, and during take-off and landing (as applicable);
 - (xiv) simulated failure of navigation and communication equipment;
 - (xv) simulated pilot incapacitation - recognition and response;
 - (xvi) briefing on recovery from turbulence and windshear on take-off and approach;
 - (xvii) approach to the stall and recovery procedure simulating ground contact imminent and ground contact not a factor (clean, take-off and landing configuration);
 - (xviii) buffet onset boundary, steep turns (45° of bank) and other flight characteristics (as applicable for initial and upgrade only);
 - (xix) aeroplane performance for climb, cruise, holding, descent and landing;
 - (xx) normal and performance limited take-offs;
 - (xxi) crosswind take-off and landing, and briefing on contaminated runway take-off and landing;
 - (xxii) take-off and landing data calculations;
 - (xxiii) simulated rejected take-off procedures (at or below 60 kts) and rejected landings;
 - (xxiv) briefing on crew and passenger evacuation procedures; and
 - (xxv) other specialized aeroplane equipment (where applicable).
- (b) Flight planning and instrument flight procedures where the air operator is authorized for VFR flight at night or flight in IMC:
- (i) departure, enroute, holding and arrival;
 - (ii) all types of instrument approaches and missed approaches in simulated minimum visibility conditions, including circling approaches (where applicable) using all levels of automation available (as applicable);
 - (iii) subject to subparagraph (iv), during initial training, a normal take-off, visual circuit, approach and landing at night; and
(amended 1998/06/01)
 - (iv) where the operator is approved for circling approaches, a night circling approach to landing may be conducted in lieu of a visual circuit.
(amended 1998/06/01)

(12) Emergency Procedures Training for Pilots

This training is required on an annual basis and shall include instruction in the location and operation of all emergency equipment. Training devices approved to simulate flight operating emergency conditions, static aeroplanes, ground demonstrations, classroom lectures, films or other devices may be used for training provided the method used ensures that each flight crew member is adequately trained in the operation or use of all emergency equipment. Where practical training is required it shall be completed on initial training and every three years thereafter.

- (a) fire in the air and on the ground;
- (b) use of fire extinguishers including practical training;
- (c) operation and use of emergency exits including practical training;
- (d) passenger preparation for an emergency landing or ditching, (as applicable) including practical training;
- (e) emergency evacuation procedures including practical training;
- (f) donning and inflation of life preservers (when equipped) including practical training;
- (g) removal from stowage, deployment, inflation and boarding of life rafts/slide rafts (when equipped) including practical training;
- (h) pilot incapacitation including practical training;
- (i) hijacking, bomb threat and other security procedures;
- (j) passenger on board medical emergency; and
- (k) special emergency procedures when the aeroplane is used on MEDEVAC operations including patient evacuation in emergency situations.

(13) Regaining Qualifications Training

For operators using an approved Level B, C, D FFS or the aeroplane, the following must be completed for all pilots who have not maintained their recency qualifications in accordance with paragraph 704.108 (1)(b) of the *Canadian Aviation Regulations* for a period between 90 days and 12 months.

- (a) a briefing on changes that have occurred to the aeroplane or its operation since the last flight; and
- (b) three take-offs and landings (which may be carried out as part of a PPC where one has come due).

(14) Regaining Qualifications After PPC Expiry

(a) Where the PPC has expired for less than 6 months the following must be completed to regain type qualification:

- (i) all the requirements specified by subsection (13) above; and
- (ii) any recurrent training, including a PPC, which may have come due during the absence from flying duties.

(b) Where the PPC has expired from between 6 and 24 months the following must be completed to regain type qualification:

- (i) all the requirements of paragraph (14)(a) above; and
- (ii) a technical ground training course consisting of an aeroplane system review and FTD training (where applicable).

(c) Where the PPC has expired for a period greater than 24 months a complete initial aeroplane type training course shall be carried out.

(15) Upgrade Training and Checking

(a) Upgrade training and checking for pilots who are qualified as a second-in-command on that aeroplane type shall include the following:

- (i) successfully complete training as a pilot-in-command in all areas of aeroplane handling and operation as outlined in the air operator's approved initial course;
- (ii) command and decision making;
- (iii) successfully complete specialized operations qualification training; (e.g. lower take-off limits etc.)
- (iv) successfully complete on that type of aeroplane the initial pilot proficiency check outlined in Schedule I or Schedule II to section 724.108, conducted by a Transport Canada inspector or an approved Company Check Pilot; and
- (v) initial line indoctrination for a pilot-in-command.

(b) Upgrade training and checking for pilots whose PPC as second-in-command on that aeroplane type has expired within the previous 24 months shall consist of completion of all regaining qualifications requirements specified in paragraphs 14(a) or (b), as applicable, as well as the requirements of paragraph (15)(a) above.

(c) Pilots who have not held a valid PPC on that aeroplane type as second-in-command for a period greater than 24 months shall be given a complete initial aeroplane type training course as well as the requirements of paragraph (15)(a) above.

(16) Right Seat Conversion Training

(a) For a left seat-qualified pilot to operate an aeroplane from the right seat, the pilot shall
(amended 2000/12/01)

(i) be qualified as captain or pilot-in-command, and be current on the aeroplane type for left seat duties,

(amended 2000/12/01)

(ii) receive sufficient technical ground training on right seat duties,

(amended 2000/12/01)

(iii) have, for initial training received after January 1, 2001, sufficient flight or FFS training to enable a Company Check Pilot, air operator aeroplane type Chief Pilot or aeroplane type Training Pilot to certify the competency of the pilot to carry out pilot duties from the right seat, and

(amended 2000/12/01)

(iv) every 12 months, complete two segments in the right seat, one as the pilot-flying and one as the pilot-not-flying;

(amended 2000/12/01)

(b) The initial training specified in subparagraph 724.115(16)(a)(iii) shall include at least the following elements:

(amended 2000/12/01)

(i) a normal take-off,

(ii) an instrument approach and landing, and

(iii) a take-off with an engine failure above V₁ for FFS training or a simulated engine failure at a safe altitude for flight training;

(c) If the currency requirements specified in subparagraph 724.115(16)(a)(iv) lapse, the initial training specified in paragraph 724.115(16)(b) shall be completed in order to regain right seat currency;

(amended 2000/12/01)

(d) A first officer, current on the aeroplane type, who is upgrading to captain on the same aircraft type will be considered to have completed the initial right seat training requirement specified in paragraph 724.115(16)(b).

(amended 2000/12/01)

(17) Flight Follower Training

Persons assigned the duties of a flight follower shall receive training in at least the following:

- (a) company indoctrination;
- (b) duties and responsibilities;
- (c) communication procedures;
- (d) applicable regulations and standards;
- (e) flight preparation procedures as applicable to assigned duties;
- (f) procedures in the event of an emergency or overdue aircraft;
- (g) accident and incident reporting procedures; and
- (h) requirements of approved *Company Operations Manual* as applicable to the duties and responsibilities.

(18) Aeroplane Surface Contamination Training

An approved surface contamination initial and recurrent training program is required for all operations personnel to ensure they are aware of hazards and procedures for ice, frost and snow critical contamination on aircraft. The training program shall include:

- (a) responsibility of pilot-in-command and other operations personnel;
- (b) regulations related to operations in icing conditions;
- (c) weather conducive to ice, frost and snow contamination;
- (d) inspection before flight and removal of contamination;
- (e) in-flight icing recognition; and
- (f) hazards related to critical surface contamination of ice, frost and snow.

(19) Minimum Equipment List (MEL) Training

When a Minimum Equipment List (MEL) has been approved for use on an aeroplane type, the air operator shall provide the following training to flight crew members, maintenance personnel, and to persons exercising operational control, as applicable:
(amended 2004/12/01)

- (a) training for maintenance personnel shall include instruction on those sections of the Maintenance Control Manual which address the MEL, placarding of inoperative equipment, maintenance release, and any other MEL related procedures;
(amended 2004/12/01)

(b) training for flight crew members and operational control personnel shall include instruction on the purpose and use of an MEL, air operator MEL procedures, elementary work as applicable, and responsibility of the pilot-in-command;
(amended 2004/12/01)

(c) recurrent training shall be conducted when required to ensure air operator personnel are aware of any changes to the MEL or MEL procedures.

(20) Transportation of Dangerous Goods

For the purposes of section 704.115 of the *Canadian Aviation Regulations* the training programs are those set out in the *Transportation of Dangerous Goods Regulations*.

(21) Lower than Standard Take-off Weather Minima

(Reported Visibility RVR 1200 feet (or 1/4 mile) and Reported RVR 600 feet)

Training is required for the pilot-in-command only, except if the operator authorizes in the operations manual, the second-in-command to conduct take-offs in lower than standard weather minima, the second-in-command shall undergo the same training as the pilot-in-command.

(a) Ground Training

This training shall include
(amended 2000/12/01)

- (i) take-off alternate requirements,
- (ii) pilot-in-command minimum experience,
- (iii) pilot-in-command responsibility for visibility and obstacle clearance requirements,
- (iv) minimum aeroplane and runway equipment requirements, and
- (v) procedures to ensure compliance with performance limitations;

(b) Synthetic Flight Training Device (SFTD) Training

(amended 2000/12/01)

- (i) Training in an SFTD is required for all operators using an RVR 600 feet authorization and the operators using an RVR 1200 feet authorization in aircraft without certified take-off performance.

(amended 2000/12/01)

- (ii) The initial and recurrent training on an SFTD shall include
(amended 2000/12/01)

(A) for RVR 600 feet:

- (I) a minimum of one completed take-off at RVR 600 feet with a failure of the critical engine at V1, and

(II) one rejected take-off at RVR 600 feet immediately prior to V1;

(B) for RVR 1200 feet:

(I) a minimum of one completed take-off at RVR 1200 feet with a failure of the critical engine at V1, and

(II) one rejected take-off at RVR 1200 feet immediately prior to V1;

(22) Area Navigation Systems (RNAV)

(a) General Training

(amended 1998/09/01)

(i) To qualify for use of RNAV systems on IFR operations, an air operator shall have an approved flight crew training and qualifications program for use of the system. Flight crew shall have completed the appropriate training and have completed an in-flight check or an equivalent check in an approved synthetic training device. This qualification check shall be conducted by an approved check pilot.

(ii) Training shall be in the following areas:

(A) pre-flight;

(B) normal operation of the system;

(C) procedures for manually updating system;

(D) methods of monitoring and cross checking system;

(E) operation in area of compass unreliability;

(F) malfunction procedures;

(G) terminal procedures;

(H) waypoint symbology, plotting procedures, record keeping duties/practices;

(I) time keeping procedures; and

(amended 2003/03/01)

(J) post-flight.

(amended 2003/03/01)

(iii) To qualify for approval to conduct GPS approaches in IFR, an air operator shall have a flight crew training program approved by the Minister. Flight crew shall have completed the appropriate training and have completed an in-flight check, or an equivalent check in a synthetic training device approved by the Minister prior to conducting GPS approaches. This qualification check shall be conducted by an approved check pilot.

(iv) Where pilots are required to use more than one type of GPS for approach, the training program shall address the differences between the units, unless the units have been determined by the Minister to be sufficiently similar.

(v) Ground training shall include “hands on” training using a desk top simulator, a computer based simulation of the unit to be used, a static in-aircraft unit, or other ground training devices acceptable to the Minister.

(b) Ground Training - Non-Integrated Receivers (Panel Mount GPS Receivers)

(amended 1998/09/01)

An air operator shall ensure that candidates are trained to proficiency in each of the elements associated with the following areas:

(i) Knowledge with the respect to the following:

(A) the GPS system, including:

(I) GPS system components and aircraft equipment;

(II) the composition of satellite constellation;

(III) the minimum number of satellites required for 2-D and 3-D navigation;

(IV) the basic concept of satellite ranging;

(V) factors affecting the accuracy of GPS signals;

(VI) the World Geodetic Survey 84 (WGS 84) datum and the effect of using any other datum;

(B) human factors applicable to the use of GPS and how errors may be reduced or eliminated;

(C) company standard operating procedures for using GPS units; and

(D) procedures for reporting GPS problems and database errors.

(ii) Ability to perform the following operational tasks:

(A) select appropriate operational modes;

(B) recall categories of information contained in the database;

(C) predict RAIM availability;

(D) enter and verify user defined waypoints;

(E) recall and verify database waypoints;

- (F) interpret typical GPS navigational displays including latitude/longitude, distance and bearing to waypoint, course deviation indication (CDI), desired track (DTK), track made good (TMG), actual track (TK), cross track error and any other information appropriate for the equipment used;
 - (G) intercept and maintain GPS defined tracks;
 - (H) determine navigation information appropriate for the conduct of the flight including ground speed (GS), estimated time of arrival (ETA) for next waypoint and destination;
 - (I) recognition of waypoint passage;
 - (J) use of 'direct to' function;
 - (K) link enroute portion of GPS flight plan to approach;
 - (L) conduct SIDs, STARs, terminal area procedures and holds;
 - (M) retrieve, verify and conduct GPS stand alone approaches; and
 - (N) conduct GPS missed approaches.
- (iii) Ability to conduct the following operational and serviceability checks:
- (A) database currency and area of operation;
 - (B) receiver serviceability;
 - (C) RAIM status;
 - (D) CDI sensitivity;
 - (E) position indication; and
 - (F) number of satellites acquired and, if available, satellite position information.
- (iv) Ability to recognize and take appropriate action for all GPS warnings and messages including, where applicable:
- (A) "loss of RAIM"
 - (B) "2D navigation"
 - (C) "In Dead Reckoning Mode"
 - (D) "database out of date"
 - (E) "GPS fail"
 - (F) "barometric input fail"

(G) “power/battery low” or “fail”

(H) “parallel offset on”; and

(I) “satellite fail”.

(c) Ground Training - Integrated Receivers (Flight Management Systems)

(amended 1998/09/01)

An air operator shall ensure that the training program candidates are trained to proficiency in each of the elements associated with the following areas:

(i) Knowledge with the respect to the following:

(A) the GPS system and theory of operation, including:

(I) GPS system components and aircraft equipment;

(II) the composition of satellite constellation;

(III) the minimum number of satellites required for 2-D and 3-D navigation;

(IV) the basic concept of satellite ranging;

(V) factors affecting the accuracy of GPS signals;

(VI) the WGS84 datum and the effect of using any other datum; and

(B) human factors applicable to the use of GPS and how errors may be reduced or eliminated (i.e. maintaining situational awareness); and

(ii) Ability to perform the following operational tasks:

(A) predict RAIM availability;

(B) link enroute portion of GPS flight plan to approach;

(C) conduct GPS stand alone approaches; and

(D) conduct GPS missed approaches.

(iii) Ability to conduct the following operational and serviceability checks:

(A) RAIM status;

(B) CDI sensitivity; and

(C) number of satellites acquired and, if available, satellite position information.

(iv) Ability to recognize and take appropriate action for all GPS warnings and messages including, where applicable:

(A) “loss of RAIM”;

(B) “2D navigation”;

- (C) “GPS fail”;
- (D) “barometric input fail”; and
- (E) “satellite fail”.

(d) Flight Training

(amended 1998/09/01)

(i) Pilots shall complete flight training in the use of GPS for approach and other associated duties for each crew position they are authorized to occupy. Flight training may be completed in an aircraft, or in a level A or higher simulator that is equipped with the same model of GPS receiver (or a model determined by the Minister to be sufficiently similar) that is installed in company aircraft.

(ii) Flight training shall be conducted by a designated training pilot who has completed the company ground training program approved by the Minister, and demonstrated proficiency in the use of the model of GPS (or a model determined by the Minister to be sufficiently similar) to an approved check pilot.

(amended 2006/06/30)

(23) Transportability of Pilot Proficiency Check

Transportability of Pilot Proficiency Checks from one air operator to another is permitted subject to the hiring air operator providing the following training which shall be specified in the approved operations/training manual:

- (a) company indoctrination;
- (b) pilot ground and emergency procedures training on each type of aeroplane the pilot is assigned, sufficient to cover the air operator procedures and equipment differences;
- (c) standard operating procedures review;
- (d) sufficient line indoctrination to allow the pilot to become familiar with the air operator routes and operational procedures. In no case shall this be less than two sectors over typical route segments that the air operator flies; and
- (e) the hiring air operator records the PPC validity and expiration date in company records.

(24) High Altitude Training

High Altitude training is required for all flight crew members operating aeroplanes above 13,000 feet ASL before first assignment on a pressurized aeroplane and every three years thereafter.

- (a) physiological phenomena in a low pressure environment, including:
 - (i) respiration;
 - (ii) hypoxia;

- (iii) duration of consciousness at altitude without supplemental oxygen; and
 - (iv) gas expansion and gas bubble formation.
- (b) other factors associated with rapid loss of pressurization including:
- (i) most likely causes;
 - (ii) noise;
 - (iii) cabin temperature change;
 - (iv) cabin fogging;
 - (v) effects on objects located near the point of fuselage failure; and
 - (vi) actions of crew members immediately following the event and the likely resultant attitude.

(25) Survival Equipment Training

Training for all crew members shall include the following:

- (a) survival concepts;
- (b) contents of survival equipment kit; and
- (c) how to use the survival equipment carried on board as appropriate for the operation.

(26) Aeroplane Servicing and Ground Handling Training for Pilots

- (a) fuelling procedures:
 - (i) types of fuel, oil and fluids used in the aeroplane;
 - (ii) correct fuelling procedures; and
 - (iii) procedures for checking fuel, oil and fluids and proper securing of caps;
- (b) use of tow bars and maximum nose wheel deflection when towing;
- (c) seasonal use of the parking brake;
- (d) installation of protective covers on the aeroplane; and
- (e) procedures for operating in cold weather such as:
 - (i) moving the aeroplane out of a warm hangar when precipitation is present;
 - (ii) procedures for applying de-icing and anti-icing fluids for the aeroplane type including critical flight controls post application inspections; and
 - (iii) engine and cabin pre-heating procedures, including proper use of related equipment.

(27) Line Indoctrination Training for Pilots

Line indoctrination shall be conducted over parts of the air operator's route structure which are typical of those over which the flight crew will be expected to fly.

The following areas shall be covered during line indoctrination training and noted in records as having been completed:

(a) Command of the aeroplane:

- (i) crew management and discipline,
- (ii) responsibilities of the pilot-in-command and other flight crew members, and
- (iii) responsibilities of the cabin crew;

(b) Aeroplane and Equipment:

- (i) MEL policy and procedures;
- (ii) C of A and other aeroplane documentation;
- (iii) deferred defects;
- (iv) maintenance release;
- (v) manuals and log books;
- (vi) Flight Data Recorder and Cockpit Voice Recorder;
- (vii) emergency exits - number, access, lighting & marking;
- (viii) fire extinguishers;
- (ix) fire axe; and
- (x) oxygen and first aid equipment, and survival equipment;

(c) Dispatch:

- (i) personnel, hours of operation, operational control; and
- (ii) company fuel policy;

(d) Aeroplane Servicing and Ramp Safety:

- (i) fuelling procedures;
- (ii) load security;
- (iii) ground equipment & handling;
- (iv) air operator's aeroplane deicing policy and procedures; and
- (v) aeroplane parking;

- (e) Reporting for Duty,
- (f) License Requirements;
- (g) Aeroplane Library;
- (h) Duty Day Limitations and Rest Facilities;
- (i) Pre-flight Safety and Crew Briefings;
- (j) Ramp Push Back and Starting Engines;
- (k) After Start Checks;
- (l) Pre-flight Checks and securing cabin;
- (m) Rejected take-off and brake cooling chart,
- (n) Departure Sequence:
 - (i) lookout; and
 - (ii) after take-off checks;
- (o) Climb Procedures:
- (p) Cruise:
 - (i) fuel management and checks; and
 - (ii) enroute diversion;
- (q) Approach Procedures:
 - (i) organization and briefing of approach;
 - (ii) descent;
 - (iii) pre-landing check and cabin security;
- (r) Landing and Taxiing:
 - (i) contaminated runway operations; and
 - (ii) after landing checks;
- (s) Shutdown;
- (t) Flight and Maintenance Logs and Records;
- (u) Defect Recording & Clearing;
- (v) Emergency Procedures:
 - (i) Hi-jack bomb threat procedures;
 - (ii) aeroplane evacuation;

- (iii) airport emergency services; and
- (iv) engine inoperative procedures and
- (w) Special considerations such as significant terrain, noise abatement, unique SAR requirements, etc. (where applicable).

(28) Line Indoctrination - Sectors/Hours Requirements

During line indoctrination, a flight crew member shall be given the following minimum experience, while performing the duties appropriate to the crew station. Sectors/hours acquired during proving or ferry flights may be counted towards this requirement. The required number of flying hours and sectors apply to the pilot-in-command and the second-in-command.

(a) For the purpose of Line Indoctrination an aeroplane would be in one of the following groups:

- (i) reciprocating engine powered;
- (ii) turbo-propeller powered;
- (iii) turbo-jet powered.

(b) For the purposes of Line Indoctrination a sector is a flight composed of a take-off, departure, arrival and landing including at least a 50 NM enroute segment.

(i) General requirements for Line Indoctrination are as follows:

- (A) crew members who have not qualified and served in the same capacity on the same group of aeroplanes shall complete Initial Line Indoctrination;
- (B) crew members who have qualified and served in the same capacity on the same group of aeroplanes shall complete Transition Line Indoctrination;
- (C) initial and Transition Line Indoctrination shall be conducted under the supervision of a training pilot;
- (D) during Initial Line Indoctrination, the pilot-in-command and second-in-command shall perform the duties of the position, with the training pilot occupying the opposite pilot operating position; and
- (E) during Transition Line Indoctrination, the pilot-in-command and second-in-command shall perform the duties of the position;

NOTE:

The training pilot may occupy the jump seat if the transitioning pilot has completed at least 2 sectors as pilot flying and has satisfactorily demonstrated to the training pilot that he or she is qualified to perform the duties of the position.

(ii) Specific requirements for Initial Line Indoctrination on reciprocating engine powered aeroplanes shall be as follows:

(A) each pilot shall perform or show knowledge of, as applicable, a mandatory list of operating manoeuvres and procedures as detailed in subsection 724.115(27) and complete 15 flying hours and 4 mandatory sectors, 2 sectors to be performed as pilot flying and 2 sectors as pilot not flying; and

(B) after completing the 4 mandatory sectors, the remaining time may be reduced by 1 hour for each additional sector flown to a maximum 50% reduction of the original time requirement;

(iii) Specific requirements for Initial Line Indoctrination on turbo-propeller powered aeroplanes shall be as follows:

(A) each pilot shall perform or show knowledge of, as applicable, a mandatory list of operating manoeuvres and procedures as detailed in subsection 724.115(27) and complete 20 flying hours and 4 mandatory sectors, 2 sectors to be performed as pilot flying and 2 sectors as pilot not flying; and

(B) After completing the 4 mandatory sectors, the remaining time may be reduced by 1 hour for each additional sector flown to a maximum 50% reduction of the original time requirement;

(iv) Specific requirements for Initial Line Indoctrination on turbo-jet powered aeroplanes shall be as follows:

(i) each pilot shall perform or show knowledge of, as applicable, a mandatory list of operating manoeuvres and procedures as detailed in subsection 724.115(27) and complete 25 flying hours and 4 mandatory sectors, 2 sectors to be performed as pilot flying and 2 sectors as pilot not flying; and

(ii) No reduction of the original time requirement shall be permitted;

(v) Specific requirements for Transition Line Indoctrination on reciprocating engine powered aeroplanes shall be as follows:

(i) each pilot shall perform or show knowledge of, as applicable, a mandatory list of operating manoeuvres and procedures as detailed in subsection 724.115(27) and complete 10 flying hours and 4 mandatory sectors, 2 sectors to be performed as pilot flying and 2 sectors as pilot not flying; and

(ii) After completing the 4 mandatory sectors, the remaining time may be reduced by 1 hour for each additional sector flown to a maximum 50% reduction of the original time requirement;

(vi) Specific requirements for Transition Line Indoctrination on turbo-propeller powered aeroplanes shall be as follows:

(i) Each pilot shall perform or show knowledge of, as applicable, a mandatory list of operating manoeuvres and procedures as detailed in subsection 724.115(27) and complete 12 flying hours and 4 mandatory sectors, 2 sectors to be performed as pilot flying and 2 sectors as pilot not flying; and

(ii) After completing the 4 mandatory sectors, the remaining time may be reduced by 1 hour for each additional sector flown to a maximum 50% reduction of the original time requirement; and

(vii) Specific requirements for Transition Line Indoctrination on turbo-jet powered aeroplanes shall be as follows:

(A) each pilot shall perform or show knowledge of, as applicable, a mandatory list of operating manoeuvres and procedures as detailed in subsection 724.115(27) and complete 25 flying hours and 4 mandatory sectors, 2 sectors to be performed as pilot flying and 2 sectors as pilot not flying; and

(B) After completing the 4 mandatory sectors, the remaining time may be reduced by 1 hour for each additional sector flown to a maximum 50% reduction of the original time requirement;

(29) Category II and III Operations

(a) Initial and Recurrent Ground Training **(amended 2011/06/30)**

The air operator's initial and annual recurrent ground training program shall provide training for pilots-in-command (as pilot-flying), seconds-in-command (as pilot-not-flying) and, where applicable, second officers in the following subjects:

(i) the characteristics, capabilities and limitations of the ILS, including the effect on system performance of interference from other airborne or taxiing aircraft and ground vehicles;

(ii) the characteristics of the visual aids and the limitations on their use as visual cues in reduced visibilities with various glide path angles and cockpit cut-off angles, and the height at which various cues may be expected to become visible in actual operations;

(iii) the operation, capabilities and limitations of the airborne systems;

(iv) approach, missed approach and rejected landing procedures and techniques including the description of the factors affecting the height loss during a missed approach in normal and abnormal aircraft configurations;

(v) the use and limitations of RVR, including the applicability of RVR readings from different positions along the runway;

(vi) a basic understanding of obstacle limitation and the obstacle-free zone, including missed approach design criteria, obstacle clearance for CAT II/III operations and obstacle clearance during a go-around and rejected landing;

(vii) the effects of low level windshear, turbulence and precipitation;

(viii) procedures and techniques for transition from instrument to visual flight in low RVR conditions, including the geometry of eye, wheel and antenna positions with reference to ILS reference datum height;

(ix) the action to be taken if the visual reference becomes inadequate when the aircraft is below decision height, and the technique to be adopted for transition from visual to instrument flight should a go-around become necessary at these low heights;

(x) the action to be taken in the event of failure of approach and landing equipment above and below decision height or alert height;

(xi) the recognition of, and action to be taken in the event of failure of ground equipment;

(xii) significant factors in the determination of decision height or alert height;

(xiii) the effect of specific aircraft malfunctions (e.g. engine failure) on auto-throttle and auto-pilot performance;

(xiv) procedures and precautions to be followed while taxiing during limited visibility conditions; and

(xv) standard operating procedures to be followed by crew members during normal, abnormal and emergency situations.

The air operator's annual recurrent ground training program shall cover the above subjects over a definite period of time (through a cycle).

(b) Synthetic Flight Training Device Training - Pilot-in-command

(i) two approaches, one of the approaches to be in an engine out configuration if the air operator's equipment is so certified and is approved to perform the manoeuvre;

(ii) a missed approach from the lowest minima approved for the air operator, or a rejected landing, as applicable;
(amended 2011/06/30)

(iii) an automatic landing from one of the approaches or manual landing as appropriate, at the maximum crosswind authorized; and

(iv) for those CAT III operations predicated on the use of a fail-passive rollout control system, a manual rollout using visual reference or a combination of visual and instrument references.

(30) Persons Assigned On Board Duties

Where an air operator has assigned on board duties to a non-flight crew member, that person shall be given adequate initial and annual training to perform the procedures relevant to the duties with which the person is to be involved including, as applicable:

- (a) authority of the pilot-in-command;
- (b) means of communication;
- (c) a general description of the aeroplane in which the person is to serve and the proper use of cabin installed systems controls;
- (d) procedures for the handling of normal, abnormal, and emergency situations including:
 - (i) safe movement in the vicinity of the aeroplane and safe movement to and from the aeroplane;
 - (ii) briefing of passengers;
 - (iii) handling of passengers;
 - (iv) securing of cabin;
 - (v) location, operation and use of emergency, life saving and survival equipment carried, including practical training;
 - (vi) fire fighting, including practical training;
 - (vii) decompression;
 - (viii) location, operation and use of emergency exits, including practical training;
 - (ix) passenger preparation for an emergency landing or ditching, including practical training; and
 - (x) evacuation, including practical training; and
- (e) knowledge of the relationship of the procedures with respect to those of the other crew members.

(31) Training Program - Minimum Training Times - Aeroplanes

(amended 1998/06/01)

(a) In this subsection, table 1 provides the minimum initial training times for aeroplanes equipped with engines as described therein and table 2 provides the minimum annual recurrent training for aeroplanes equipped with engines as described therein.

(amended 2006/06/30)

(b) Flight training time in these tables is “flight time”.

(amended 2006/06/30)

(c) Pilots will receive some PNF time in the simulator in addition to the PF times given in the tables.

(amended 2006/06/30)

(d) The terms “Lvl A”, “Lvl B” and “Lvl C” refer to the approved training program, not to the certification level of the simulator used.

Table 1
(per paragraph 724.115(31)(a))
(amended 2000/12/01)

Minimum Amount of Hours of Initial Training	Ground Training			Flight Training Simulator and Aircraft (PF - Pilot Flying)					Aircraft Only
	Basic	Pressurized	Turbine	Lvl A ¹	Lvl B ¹	Lvl C	Lvl D	A/C ²	
Multi-engine 10* to 19*	16.0	4.0	4.0	8.0	8.0	10.0	10.0	2.0	5.0
Multi-engine Piston 20+* ++	18.0	2.0							6.0
M/Engine Turbine 20+* ++	45.0			10.0	10.0	12.0	12.0	2.0	8.0
Citation 500 Series	35.0			10.0	10.0	12.0	12.0	2.0	8.0
Other Turbo-jet	40.0			12.0	12.0	14.0	14.0	2.0	8.0

* Denotes the number of passenger seats for which the aeroplane was certificated.

++ Included since certain aeroplanes certificated for 20+ passengers are regulated by CAR 704 (e.g., Twin Otter)

¹ Training on aircraft required.

² The minimum aircraft training required.

Table 2
(per paragraph 724.115(31)(a))
(amended 2000/12/01)

Minimum Amount of Hours of Recurrent Training (Annual)	Ground Training			Flight Training Simulator and Aircraft (PF - Pilot Flying)					Aircraft Only
	Basic	Pressurized	Turbine	Lvl A	Lvl B	Lvl C	Lvl D	A/C ¹	
Multi-engine 10*to 19*	7.0	0.5	0.5	4.0	4.0	4.0	4.0	1.0	2.0
Multi-engine Piston 20+*++	7.5								3.0
M/Engine Turbine 20+*++	20.0			4.0	4.0	4.0	4.0	1.0	3.0
Citation 500 Series	12.0			4.0	4.0	4.0	4.0	1.0	3.0
Other Turbo-jet	15+			4.0	4.0	4.0	4.0	1.0	3.0

* Denotes the number of passenger seats for which the aircraft was certificated.

++ Included since certain aeroplanes certificated for 20+ passengers are regulated by CAR 704 (e.g., Twin Otter)

¹ Amount of hours of additional training required on aircraft if the operator does not have an approved Level A or higher Training Program authorizing recurrent training only on a full flight simulator.

(amended 2000/12/01)

(32) Controlled Flight into Terrain (CFIT) Avoidance Training

(amended 2000/06/01)

Subject to paragraph (d), air operators shall provide the following CFIT avoidance training to all flight crew members operating aeroplanes approved for flight under instrument meteorological conditions:

(a) initial and biennial ground training:

- (i) factors that may lead to CFIT accidents and incidents,
- (ii) operational characteristics, capabilities, and limitations of GPWS (if applicable),
- (iii) CFIT prevention strategies,
- (iv) methods of improving situational awareness, and
- (v) escape manoeuvre techniques and profiles applicable to the aeroplane type;

(b) air operators with GPWS equipment using synthetic training devices in their approved initial training program shall conduct CFIT avoidance training as follows:

- (i) one escape manoeuvre performed in VMC in response to a GPWS warning, and
- (ii) one escape manoeuvre performed in IMC in response to a GPWS warning;

(c) air operators with GPWS equipment using synthetic training devices in their approved recurrent training program shall conduct CFIT avoidance training biennially as follows:

- (i) one escape manoeuvre performed in VMC in response to a GPWS warning where the air operator is approved for VFR only operations, or
- (ii) one escape manoeuvre performed in IMC in response to a GPWS warning where the air operator is approved for IFR operations; and

(d) where the flight crew members operate aircraft equipped with a Terrain Awareness and Warning System (TAWS), the training received on TAWS is considered to have met the requirements of paragraphs (a), (b) and (c).

(33) Airborne Icing Training

(amended 2000/06/01)

Approved initial and recurrent training programs for all flight crew shall include airborne icing training to ensure they are fully aware of the hazards presented by airborne icing and the operating procedures to avoid and exit hazardous icing conditions. The training program shall include:

- (a) basis of certification for flight into known icing conditions;
- (b) airborne icing definitions and terminology;
- (c) aerodynamic effects of airborne icing;

- (d) airborne icing weather patterns, including both classical and non-classical mechanisms for freezing precipitation;
- (e) flight planning and in flight icing information;
- (f) information specific to aircraft fleet(s) concerning operation de- and anti-ice equipment, and operational procedures; and
- (g) company directives concerning operations in airborne icing contained in COMs, SOPs, and other company documents.

(34) Low-Energy Awareness Training
(amended 2000/12/01)

- (a) Initial and recurrent ground and flight training is required for all flight crew members operating turbo-jet aeroplanes;
- (b) Ground training shall include:
 - (i) low-energy landing regime for the aircraft type,
 - (ii) aircraft and engine handling and performance characteristics in the low-energy regime, and
 - (iii) aircraft balked landing procedures;
- (c) Where flight training is conducted in a synthetic training device, this training shall include one balked landing initiated in the low-energy regime.

(35) Pacific RNP-10 Training
(amended 2002/12/01)

For a flight crew member to qualify for operations in Pacific RNP-10 airspace, an air operator shall have initial and recurrent approved training programs that ensure that each flight crew member is proficient in the following areas:

- (a) flight planning for RNP-10 airspace;
- (b) navigation performance requirements for RNP-10 airspace;
- (c) en route procedures for RNP-10 airspace; and
- (d) contingency procedures for RNP-10 airspace.

(36) Reduced Vertical Separation Minima (RVSM) Training
(amended 2002/12/01)

For a flight crew member to qualify for operations in RVSM airspace, an air operator shall have initial and recurrent approved training programs that ensure that each flight crew member is proficient in the following areas:

- (a) knowledge of the floor, ceiling and horizontal boundaries of the RVSM airspace to be operated in;
- (b) rules on exclusion of non-RVSM compliant aircraft;
- (c) pilot procedures with respect to:
 - (i) pre-flight and in-flight altimeter checks,
 - (ii) use of the automatic altitude control system,
 - (iii) Minimum Equipment List (MEL) items applicable to RVSM operations,
 - (iv) special procedures for in-flight contingencies,
 - (v) weather deviation procedures,
 - (vi) track offset procedures for wake turbulence and inconsequential collision avoidance systems alerts, and
 - (vii) pilot level-off call;
- (d) procedures for flight of non-RVSM compliant aircraft for maintenance, humanitarian or delivery flights; and
- (e) use of ACAS/TCAS.

(37) Stabilized Constant-Descent-Angle (SCDA) Non-Precision Approach Training
(amended 2006/12/01)

The air operator shall ensure that the pilot-in-command and the second-in-command, in order to conduct a stabilized constant-descent-angle (SCDA) non-precision approach, receive ground and simulator or flight training that addresses the following subjects within their initial and recurrent training programs:

- (a) factors that affect altitude loss during the initiation of a missed approach;
- (b) the relationship between the published missed approach point (MAP) and the position where a missed approach is commenced following a stabilized final approach descent to minimum descent altitude (MDA);

Information Note: *The missed approach climb from a stabilized final approach descent will normally occur some distance before reaching the published MAP.*

(c) the requirement to initiate a missed approach if the required visual reference necessary to continue to land has not been established, at the latest on reaching the earlier of:

(i) the minimum descent altitude, and

(ii) the MAP;

(d) the requirement to commence the horizontal (lateral) navigation portion of the published missed approach procedure at the MAP;

Information Note: *It may be essential for obstacle clearance to delay any turns stated in the published missed approach procedure until the aircraft crosses the MAP.*

(e) the requirement to ensure that any altitudes at step-down fixes between the final approach fix (FAF) and the MAP are respected;

(f) the operation of any aircraft computer-generated approach slope systems or other methods of computing stable approach paths to the target touchdown point;

Information Note: *The effects of horizontal position error and temperature on the vertical path, whether it is derived from an inertial, barometric vertical navigation (Baro VNAV), or altimeter reference, shall be addressed.*

(g) the requirement to verify any altitude and waypoint information from a navigation database against an independent source;

(h) crew coordination upon reaching MDA and during the execution of a missed approach; and

(i) utilization of temperature corrections to MDA and other published altitudes and remote altimeter correction factors, when required.

DIVISION IX - MANUALS

724.121 *Contents of Company Operations Manual*

The *Company Operations Manual* shall contain at least the following, as applicable to the operation:

(a) preamble relating to use and authority of manual;

(b) a table of contents;

(c) amending procedures, amendment record sheet, distribution list and list of effective pages;

(d) a copy of the Air Operator's Certificate and operations specifications;

(e) a chart of the management organization;

(f) the duties, responsibilities and succession of command of management and operations personnel;

- (g) description of operational control system including:
 - (i) flight authorization and flight preparation procedures;
 - (ii) preparation of operational flight plan and other flight documents;
 - (iii) procedures to ensure the flight crew are advised, prior to dispatch, of any aeroplane defects that have been deferred, (by Minimum Equipment List or any other means);
 - (iv) flight watch, flight following and communication requirements;
 - (v) dissemination procedures for operational information and acknowledgement;
 - (vi) fuel and oil requirements;
 - (vii) weight and balance system;
 - (viii) accident/incident reporting procedures and procedures for reporting overdue aircraft;
 - (ix) use of checklists;
 - (x) maintenance discrepancy reporting and requirements of completion of flight; and
 - (xi) retention period of operational flight plans;
- (h) sample of operational flight plan, weight and balance form and retention period;
- (i) CVR procedures;
- (j) operating weather minima and applicable requirements for IFR, VFR, VFR at night, VFR over-the-top including alternate aerodrome requirements;
- (k) instrument and equipment requirements;
- (l) instrument approach procedures (including company approaches), and alternate minima requirements;
- (m) procedures for establishing company routes in uncontrolled airspace;
- (n) procedures pertaining to enroute operation of navigation and communication equipment (including collision avoidance procedures);
- (o) operations in hazardous conditions such as icing, thunderstorms, white out, windshear;
- (p) aeroplane performance limitations;
- (q) carriage and securing of cargo, carry on baggage, commissary and equipment (as applicable);
- (r) passenger briefing procedures;
- (s) use of aircraft flight manual, aircraft operating manual, standard operating procedures and minimum equipment lists (as applicable);

- (t) aeroplane ice, frost and snow critical surface contamination procedures;
- (u) procedures of carriage of dangerous goods;
- (v) fuelling procedures including:
 - (i) fuel contamination precautions;
 - (ii) bonding requirements;
 - (iii) fuelling with engine running (not permitted with passengers on board, see Section 602.09 of the *Canadian Aviation Regulations*; and
 - (iv) fuelling with passengers on board;
- (w) list of emergency survival equipment carried on the aeroplane and how to use equipment;
- (x) emergency procedures for:
 - (i) emergency locator transmitter;
 - (ii) passenger preparation for emergency landing/ditching;
 - (iii) emergency evacuation;
 - (iv) ground emergency coordination procedures; and
 - (iv) unlawful interference;
- (y) minimum flight crew members required and flight crew member qualifications;
- (z) flight duty time limitations and rest requirements;
- (a-a) training programs including copy of company training and qualification record form(s);
- (b-b) use of oxygen;
- (c-c) operational support services and equipment;
- (d-d) passenger and cabin safety procedures for embarking and deplaning passengers when engines are running;
(amended 1998/06/01)
- (e-e) float operators shall include passenger and cabin safety procedures unique to their environment;
- (f-f) inspection details and frequency of inspection of emergency equipment carried on board the aeroplanes;
- (g-g) policy regarding GPWS and TCAS (if applicable);
- (h-h) procedures for MNPS, CMNPS and re-clear flights, including log keeping, (if applicable);

- (i-i) policy on occupation of observer seat (if applicable);
- (j-j) requirement for responsibility for preparing runway analysis charts;
- (k-k) procedures for reduced VFR limits in uncontrolled airspace (if applicable);
- (l-l) copies of all forms utilized including sufficient instruction on form completion;
- (m-m) for dedicated or contracted MEDEVAC operations, operational procedures. These shall include procedures which will ensure, to the maximum extent possible, that decisions affecting safety of flight are not influenced by the condition of the patient; and
(amended 2003/06/01)
- (n-n) other information related to safety.
(amended 2003/06/01)

724.123 *Aeroplane Operating Manual*

An aeroplane operating manual shall consist of the following:

- (a) table of contents;
- (b) list of effective pages;
- (c) amending procedures;
- (d) preamble;
- (e) identification of the aeroplane by the type and registration it is applicable to; and
- (f) aeroplane operating procedures and limitations that are not less restrictive than those contained in the aeroplane flight manual and *Canadian Aviation Regulations* (as amended).

724.124 *Aeroplane Standard Operating Procedures (SOP's)*

The Standard Operating Procedures Manual shall contain the following information for each type of aeroplane operated. Where there are significant differences in equipment and procedures between aeroplanes of the same type operated the Standard Operating Procedures Manuals shall show the registration mark of the aeroplane, it is applicable to.

Required information, if contained in another publication carried on board the aeroplane during flight, need not be repeated in the SOP.

The SOP shall include the following as applicable to the operation:

(1) General

- (a) table of contents;
- (b) list of effective pages;
- (c) amending procedure;

- (d)* preamble;
- (e)* communications;
- (f)* crew coordination;
- (g)* use of check lists;
- (h)* standard briefings; and
- (i)* standard calls;

(2) Normal Procedures

- (a)* weight and balance control requirements;
- (b)* ramp/gate procedures;
- (c)* battery/APU engine starts;
- (d)* taxi;
- (e)* take-off and climb;
- (f)* cruise;
- (g)* descent;
- (h)* approaches IFR, visual, VFR, and circling;
- (i)* landing;
- (j)* missed approach and balked landing procedures;
- (k)* stall recovery;
- (l)* fuelling with passengers on board;
- (m)* use of on board navigation and alerting aids; and
- (n)* check lists;

(3) Abnormal and Emergency Procedures

- (a)* emergency landings/ditching - with time to prepare and without time to prepare;
- (b)* pilot incapacitation and two-challenge rule, (2 pilot crew);
- (c)* bomb threat and hijacking;
- (d)* engine fire/failure/shutdown;
- (e)* propeller over speed (as applicable);
- (f)* fire, internal/external;
- (g)* smoke removal;

- (h)* rapid decompression (as applicable);
- (i)* flapless approach and landing (as applicable);
- (j)* rejected take-off;
- (k)* inadvertent encounter with moderate to severe in flight icing; and
(amended 1999/09/01)
- (l)* other abnormal and emergency procedures that are specific to the type of aeroplane;

(4) Diagrams

- (a)* normal take-off;
- (b)* engine out take-off;
- (c)* precision approach, all engines operating;
- (d)* precision approach, engine out;
- (e)* non-precision approach, all engines operating;
- (f)* non-precision approach, engine out;
- (g)* go-around, all engines operating;
- (h)* go-around, engine out;
- (i)* VFR circuits;
- (j)* partial flaps/slats approach; and
- (k)* flapless approach.



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CANADIAN AVIATION REGULATIONS

PART VII - COMMERCIAL AIR SERVICES

STANDARD 724 - COMMUTER OPERATIONS - HELICOPTERS

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NOTE

All amendments to the CARs will be indicated by the Coming into Force date, immediately following the amended text.

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STANDARD 724 - COMMUTER OPERATIONS - HELICOPTERS

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Foreword

This Commercial Air Services Standard outlines the requirements for complying with Subpart 704 of the *Canadian Aviation Regulations*.

For ease of cross reference the divisions and numbers of the standard are assigned to correspond to the regulations, therefore Standard 724.05 would reflect a standard required by Regulation 704.05.

PART VII - COMMERCIAL AIR SERVICES

STANDARD 724 - COMMUTER OPERATIONS - HELICOPTERS

DIVISION I - GENERAL

724.01 *Application*

(1) The standards under this Subpart apply to every Canadian air operator engaged in commercial air services under Subpart 704 of the *Canadian Aviation Regulations*.

(2) The words and expressions used in these Standards have the same meaning as in the General Provisions in Section 100.01 of the *Canadian Aviation Regulations* with the following additions:

Definitions

“deplane” means disembark. A helicopter is deplaned when the passengers leave the helicopter (or disembark) in the normal manner, as opposed to evacuating; (*débarquement*)

“evacuate” means the egress from a helicopter in an emergency situation using all available exits and assist means; (*evacuation*)

“fuelling” means the act of transferring fuel into or out of a helicopter’s fuel tanks from or to an external supply; (*avitaillement ou reprise de carburant*)
(amended 2003/06/01)

“take-off safety speed” means a referenced airspeed obtained after lift-off at which the required one-engine inoperative climb performance can be achieved; (*vitesse de sécurité au décollage*)

“wide-body helicopter” means a helicopter having an interior cabin width of 2m (6’7”) or more; (*hélicoptère gros porteur*)

DIVISION II - CERTIFICATION**724.07 Issuance or Amendment of Air Operator Certificate****(1) Application for an Air Operator Certificate**

The following constitutes an application for an air operator certificate:

- (a) Form 26-0045 Airports - information required to determine the suitability of the base of operations, sub-bases and all scheduled points. The applicant shall be able to demonstrate that operations are permitted at each base or scheduled point. This will normally be done by providing written permission from the Local Airport Authority. Where the air operator can not obtain a written permission and operations have not been denied in writing by the LAA, access to the aerodrome shall be demonstrated by other means such as facilities provided through a lease or contractual agreement or ownership of a heliport;
- (b) Form 26-0046 Aircraft - information with respect to each helicopter by registration;
- (c) Form 26-0047 Personnel - information on required personnel. These must be supported by resumes and statements of qualification for each required position;
- (d) Form 26-0048 Maintenance Facilities;
- (e) Maintenance Control Procedures;
- (f) *Company Operations Manual*;
- (g) Standard Operating Procedures (if applicable);
- (h) Minimum Equipment List(s) (if applicable);
- (i) nomination for Company Check Pilot (if applicable);
- (j) Form 26-0448 Cabin Safety as applicable.

Qualifications and Responsibilities of Operational Personnel**(2) Operations Manager****Qualifications**

- (a) hold or have held the appropriate licence and ratings for which a pilot-in-command is required to hold for one of the helicopters operated; or have acquired not less than 3 years related supervisory experience with an operator of a Commercial Air Service whose flight operations are similar in size and scope; and
- (b) demonstrate knowledge to the Minister with respect to the content of the operations manual, the air operator's certificate and operations specifications, the provision of the regulations and the standards necessary to carry out the duties and responsibilities to ensure safety.

Responsibilities

The operations manager is responsible for safe flight operations. In particular, the responsibilities of the position include:

- (a) control of operations and operational standards of all helicopters operated;
- (b) the identification of operations coordination functions which impact on operational control (eg. maintenance, crew scheduling, load control, equipment scheduling);
- (c) supervision, organization, function and manning of the following;
 - (i) flight operations;
 - (ii) cabin safety;
 - (iii) crew scheduling and rostering;
 - (iv) training programs; and
 - (v) flight safety;
- (d) the contents of the air operator's *Company Operations Manual*;
- (e) the supervision of and the production and amendment of the *Company Operations Manual*;
- (f) liaison with the regulatory authority on all matters concerning the flight operations including any variation to the air operator's operator certificate;
- (g) liaison with any external agencies which may effect air operator operations;
- (h) ensuring that the air operator's operations are conducted in accordance with current regulations, standards and air operator policy;
- (i) ensuring that crew scheduling complies with flight and duty time regulations, and that all crew members are kept informed of any changes to the regulations and standards;
- (j) the receipt and actioning of any aeronautical information affecting the safety of flight;
- (k) the dissemination of helicopter safety information, both internal and external;
- (l) qualifications of flight crew;
- (m) maintenance of a current operations library; and
- (n) in his or her absence, all responsibilities for operational duties shall be delegated to another individual qualified in accordance with the *Canadian Aviation Regulations* except that the knowledge requirements detailed under Operations Manager Qualifications may be demonstrated to the air operator rather than the Minister.

(3) Chief Pilot

Qualifications

The chief pilot shall have the following qualifications:

(amended 2003/06/01)

(a) if the Air Operator Certificate authorizes day VFR only - hold an Airline Transport Pilot Licence (Helicopter) or a Commercial Pilot Licence (Helicopter);

(amended 2003/06/01)

(b) if the Air Operator Certificate authorizes day and Night VFR - hold an Airline Transport Pilot Licence (Helicopter) or a Commercial Pilot Licence (Helicopter);

(amended 2003/06/01)

(c) if the Air Operator Certificate authorizes IFR - hold an Airline Transport Pilot Licence (Helicopter) with an instrument rating;

(amended 2003/06/01)

(d) have at least 3 years experience as pilot-in-command of multi-engined helicopters;

(e) be qualified in accordance with the air operators training program to act as pilot-in-command of one of the types of helicopters operated;

(f) demonstrate knowledge to the Minister with respect to the content of the *Company Check Pilot Manual*, as applicable, the *Company Operations Manual*, the provisions of the regulations, standards and flight operating procedures necessary to carry out the duties and responsibilities to ensure safety; and

(g) the chief pilot's personal record in relation to aviation shall not include:

(amended 2003/06/01)

(i) any conviction under subsection 7.3(1) of the *Aeronautics Act*; or

(ii) two or more convictions, occurring during separate unrelated events, under the *Canadian Aviation Regulations*.

Responsibilities

The chief pilot(s) is responsible for the professional standards of the flight crews and in particular for:

(a) developing standard operating procedures;

(b) developing and implementing all required approved training programs for the air operator's flight crews;

(c) issuing directives and notices to the flight crews as required;

(d) the operational suitability and requirements of all aerodromes and routes served by the air operator;

- (e) the actioning and distribution of accident, incident, and other occurrence reports;
- (f) the processing and actioning of any crew reports;
- (g) the supervision of flight crews;
- (h) assuming any duties delegated by the Operations Manager; and
- (i) in his or her absence, all responsibilities for duties shall be delegated to another individual qualified in accordance with this subsection except that the knowledge requirements may be demonstrated to the air operator rather than the Minister.

(4) Person Responsible for Maintenance

The person responsible for the maintenance control system shall be qualified in accordance with Section 726.03 of the *Canadian Aviation Regulations*.

(5) Operational Support Services and Equipment

The requirement for operational support services and equipment will be dependent on type of helicopters and the size and scope of operations and shall include the following as applicable:

- (a) operational control system requirements;
- (b) flight operations publications including a copy of the *Aeronautics Act*, applicable *Canadian Aviation Regulations*, *Company Operations Manual*, *Maintenance Control Manual/Maintenance Procedures Manual* (as applicable), *Canada Flight Supplement*, *Water Aerodrome Supplement* (if applicable), *Rotorcraft Flight Manuals*, *helicopter Operating Manuals* (if applicable), *Standard Operating Procedures*, *Aeronautical Information Publication*, *Minimum Equipment Lists* (if applicable) and appropriate maps and charts;
- (c) passenger and cargo handling requirements;
- (d) communications requirements;
- (e) provision for handling dangerous goods (if applicable);
- (f) weather availability requirements;
- (g) ground de-icing/ anti-icing program requirements; and
- (h) helicopter servicing facilities and ground handling equipment.

724.08 Contents of Air Operator Certificate

The following are the standards for Operations Specifications which may be issued under this section:

(1) Special Helicopter Procedures (refers to subparagraph 704.08(g)(viii) of the *Canadian Aviation Regulations*)
(amended 2003/03/01)

The standard for authorization to use the helicopter offshore Non-Directional Beacon/Airborne Radar Approach (NDB/ARA) procedure is:

- (a) the helicopter used is type approved as a Transport Category A rotorcraft;
- (b) the helicopter is equipped with:
 - (i) two independent VHF air ground communications systems and two radio altimeter indicators with altitude alert functions;
 - (ii) one ADF and weather radar incorporating a beacon receiver mode;
 - (iii) rain protection for each windshield; and
 - (iv) a heat source for each airspeed pitot system;
- (c) the aerodrome shall be equipped with:
 - (i) ground/air communications equipment capable of providing essential approach and landing information;
 - (ii) facilities to provide essential information related to altimeter setting, observed weather, wind speed and direction, aerodrome condition and, if applicable, pitch and roll of the deck; and
 - (iii) at least one non-directional beacon (NDB);
- (d) **Flight Crew Member Qualifications**
 - (i) Before pilots may conduct approaches to a minimum descent altitude of 150 feet they shall have demonstrated, within the proceeding 12 months, to a Transport Canada Inspector or a Company Check Pilot their proficiency conducting NDB/ARA approaches to 150' MDA. The check may be conducted in an approved synthetic flight training device provided the air operator is approved to use the FTD for pilot training. NDB/ARA certification shall be annotated on the Pilot Check Report; and
 - (ii) Pilots-in-command having less than 100 hours pilot-in-command experience on the helicopter type or not currently holding NDB/ARA certification are restricted to NDB/ARA 250' MDA; and
- (e) approach beyond the Final Approach Fix when visibility is reported at less than 1/4 statute mile is prohibited.

(2) Category I ILS - 100' DH

The standards for authorization to use ILS approach minima to 100'DH and reported RVR of not less than 1200' on a Category I Instrument Landing System (ILS) are:

- (a) the helicopter used is type-approved as a Transport Category A rotorcraft;
- (b) the approach is a Category I ILS instrument approach procedure as published in the *Canada Air Pilot* and the ILS system is serviceable and functioning, including medium or high intensity approach lighting and a forward scatter visibility sensor or a transmissometer at either the approach end or mid-point of the runway;
- (c) both the pilot-in-command (PIC) and the second-in-command (SIC) have at least 100 hours on type of rotorcraft flown;
- (d) the air operator has developed an acceptable program and has received authorization to conduct training and checks in an approved synthetic flight training device;
- (e) the PIC and the SIC shall be checked within the previous 12 months in an approved synthetic flight training device by an approved check pilot or a Transport Canada Inspector and shall be certified as competent to use these minima;
- (f) the helicopter shall be established in a stabilized approach and shall be flown at an indicated airspeed not exceeding 80 knots from the final approach fix (FAF) inbound;
- (g) the helicopter shall be equipped with the following serviceable and functioning systems:
 - (i) a flight director or single automatic approach coupler augmenting the stabilization system;
 - (ii) two radio altimeter indicators having an altitude alert function which do not interfere with the normal operation and display of the radio altimeter system;
 - (iii) ice and rain protection for each windshield and a heat source for each airspeed system pitot tube installed;
 - (iv) two independent VHF air-ground communications systems; and
 - (v) dual ILS localizer and glide slope receivers and associated avionics failure warning systems;
- (h) the air operator shall provide training to flight crew members in accordance with the standards of Section 724.115;

(i) for the purposes of crew certification, a successful approach is defined as one in which, at the DH:

- (i) the helicopter is in trim for continuation of a normal approach and landing;
- (ii) the indicated airspeed, heading and threshold height are satisfactory for a normal transition to an in-ground effect hover or run-on landing without an abnormally large flare such as would cause a gain in altitude and/or a loss of required visual reference;
- (iii) the aircraft is positioned and tracking to remain within the lateral confines of the runway extended;
- (iv) deviation from the glide path does not exceed one dot, as displayed on the ILS indicator; and
- (v) no unusual roughness or excessive attitude changes have occurred after leaving the final approach fix (FAF); and

(j) for the purposes of crew certification:

- (i) the proficiency check (initial and recurrent) will be conducted by an approved company check pilot or by a Transport Canada Inspector. The company check pilot must receive lower limits training and be monitored initially in the simulator by a Transport Canada Inspector, prior to conducting lower limits checks on company personnel;
- (ii) the crew will consist of a pilot-in-command and a second-in-command and the company check pilot or the Transport Canada Inspector will not form part of the crew;
- (iii) the proficiency check (initial and recurrent) for each flight crew member shall include at least one RVR 1200'/DH 100' approach to a missed approach during which a practical emergency (e.g. engine fire) is introduced to assess crew coordination, plus a subsequent RVR 1200'/DH 100' ILS approach to a landing; and
- (iv) the lower limits certification shall be annotated on the Pilot Check Report and a copy shall be retained by the air operator in the respective pilot file.

(3) Instrument Approaches - Global Positioning System (GPS) (refers to subparagraph 704.08(g)(i) of the *Canadian Aviation Regulations*)
(amended 2003/03/01)

(a) The standard requirements for authorization to fly instrument approach procedures using only GPS navigation information are:

- (i) an operational evaluation in accordance with paragraph 724.08(3)(b) has been completed by the Minister on each aircraft type/GPS/FMS model installation for which approach authorization is sought;
- (ii) the air operator has an approved flight crew training and qualifications program for use of the GPS/FMS system that meets the requirements of subsection 724.115(20); and

(iii) standard operating procedures have been amended to reflect GPS approach operations and approved by the Minister (where required).

(b) The following items will be assessed in the operational evaluation prior to the approval of the operator's GPS approach standard operating procedures (where applicable) and training program. Identical installations of the same model of GPS in the same type of aircraft with the same operator do not need separate evaluations.

(i) Database

The geographical coverage area for the database shall be compatible with the type of operations conducted by the company. The air operator shall have procedures in place to ensure that the database will be updated in accordance with the appropriate data revision cycle. This shall include a contract with a database supplier and the inclusion, in the appropriate company manuals, of the person responsible for installing the updates in the aircraft. The company shall have a procedure in place for pilots to report database errors and for information on database errors to be passed on to other company pilots, the avionics manufacturer and the Minister.

(ii) Unit Installation and Operation

The handling and procedures associated with the GPS avionics shall be such that all operations required for GPS approach can be accomplished without an adverse impact on normal crew duties and responsibilities. GPS related tasks shall not consume the attention of the pilot not flying (PNF) during critical phases of flight (i.e. between the time the aircraft turns inbound on the final approach course and the time the aircraft is established in the climb configuration on a missed approach).

(iii) Control Display Unit (CDU) and Course Deviation Indicator (CDI) / Distance Display

If the GPS/FMS control unit is not adequately accessible from each pilot position, or if GPS course deviation and distance displays are not within the primary field of view at both pilot stations, the air operator shall designate in the standard operating procedures the position that the pilot flying (PF) and pilot not flying (PNF) are required to occupy during GPS approach for that type of installation. Aircraft types that are certified for operation by two crew members shall have GPS course deviation and distance displays at each pilot station. An Operation Specification authorizing GPS approaches shall not be issued unless the PNF has a means acceptable, in the Minister's opinion, of monitoring the PF during an approach.

(iv) Distance Display on the HIS

Installations where GPS guidance information (course tracking, To/From and NAV flags) are switched onto the HSI for display, but the DME distance information is not switched out (i.e. DME distance rather than GPS distance is displayed continuously on the HSI even when GPS source is selected to HSI), shall require the air operator, in the

standard operating procedures for GPS approach, to deselect other NAV/DME sources to eliminate distance displays in the pilot's primary field of vision not related to the approach procedure being flown.

(v) Annunciation

Responses to system annunciation (including Receiver Autonomous Integrity Monitoring (RAIM) warnings), the means of selecting GPS track information to the CDI/HSI and the means of coupling GPS steering information to the aircraft automatic flight control system shall be compatible with the safe operation of the aircraft type/category. Standard operating procedures shall specify the procedure whereby the control unit is programmed, approach waypoints are verified against an independent source, approach mode is armed, and cockpit NAV source and AFC guidance source switches are selected and verified. Any switch selection or programming errors that the Minister believes are likely to occur and that could lead to a serious incident shall, if possible, be identified and addressed in training and in the standard operating procedures. Otherwise, the installation shall not be approved for approach use.

(vi) Airborne Evaluation

The Minister shall observe the pre-flight and in-flight operation of the unit on at least one GPS approach and missed approach. If the PF is allowed to occupy either seat during GPS approaches, then one approach from each pilot position shall be demonstrated. An airborne evaluation in an aircraft must take place under VFR. Emphasis shall be on crew coordination, pilot workload (PF and PNF), and switch selections.

DIVISION III - FLIGHT OPERATIONS

724.14 *Scheduled Air Service Requirements*

The standard for scheduled operations into or out of an uncertified aerodrome is as follows:

The operation shall be conducted under conditions established by the Minister which require the air operator and the aerodrome operator to ensure a level of safety in respect to the use of the aerodrome that is equivalent to the level of safety established by Subpart 302 of the *Canadian Aviation Regulations*.

724.15 *Operational Control System*

Operations conducted under Subpart 704 of the *Canadian Aviation Regulations* require a Type C or D operational control system. Another organization may be contracted to exercise operational control on behalf of an air operator.

Type C Operational Control System

General

(a) Application

A Type C operational control system shall apply to Commuter Operations using helicopters operating under Instrument Flight Rules (IFR) and Visual Flight Rules (VFR) at night.

(b) Responsibility and Authority

Operational control is delegated to the pilot-in-command of a flight by the Operations Manager, who retains responsibility for the day to day conduct of flight operations.

(c) Centres

Current information on the location of the air operator's helicopters shall be maintained at the main base of operations, its sub-base or, where appropriate, the location from which flight following is being carried out.

(d) Communications

Each aircraft shall maintain two-way communications with a ground radio station for the purpose flight following. Such ground stations may be operated by the government, the air operator or a private agency.

(e) Dispatch Release

Flights operated under this system are self dispatched and released by the pilot-in-command.

(f) Flight Following

Flight Following for a Type C system is the monitoring of a flight's progress, the provision of such operational information as may be required by that flight, and the notification of appropriate air operator and search and rescue authorities if the flight is overdue or missing.

Flight Following procedures and the standards of training and qualification for the individual performing this function shall be described in the air operators *Company Operations Manual*.

The pilot-in-command is solely responsible for flight watch but shall be supported by an air operator provided flight following system containing the following elements:

- (i) a person knowledgeable in the air operator's flight alerting procedures, on duty and able to respond to requests by the pilot-in-command for information related to the flight. Such information shall include meteorological information without analysis or interpretation;

(ii) the progress of each flight from its commencement to its termination, including any intermediate stops, shall be monitored, which may be done by the same person as in paragraph (i) above; and

(iii) the pilot-in-command shall be responsible for passing messages concerning landings and departures from point of origin, enroute stops and final destination to the person described in paragraph (i) above.

Type D Operational Control System

General

(a) Application

A Type D operational control system shall apply to Commuter Operations using helicopters under Visual Flight Rules (VFR) during day.

(b) Responsibility and Authority

Operational control is delegated to the pilot-in-command of a flight by the Operations Manager, who retains responsibility for the day to day conduct of flight operations.

(c) Centres

Current information on the location of the air operator's helicopters shall be maintained at the main base of operations, its sub-base or, where appropriate, at the location from which flight following is being carried out.

(d) Communications

Each helicopter shall be equipped with serviceable and functioning communications equipment that permits the pilot-in-command to communicate with a ground radio station for the purpose of flight following. Such ground stations may be operated by the government, the air operator or a private agency.

(amended 2000/06/01)

(e) On Duty

A person knowledgeable in company flight alerting procedures shall be on duty or available when operations are being conducted.

(amended 2000/06/01)

(f) Flight Following

Flight Following for a Type D system is the monitoring of a flight's progress and the notification of appropriate company and search and rescue authorities if the flight is overdue or missing. Flight following procedures and the standards of qualifications for the individual performing this function shall be described in the air operator's Company Operations Manual. Each flight shall be conducted under a VFR Flight Plan or Flight Itinerary as appropriate.

(amended 2000/06/01)

724.17 Operational Flight Plan

(1) For day VFR operations, the flight plan or flight itinerary may constitute the operational flight plan. A flight itinerary for day VFR may be in the form of a notice board, wall map or similar flight information system at the base of operations. A written copy of the operational flight plan need not be carried or retained by the operator for day VFR local flights which originate and terminate on the same day at the same aerodrome.

(2) Minimum Content of an Operational Flight Plan - VFR Night and IFR Operations

- (a)* Air Operator name;
- (b)* Date;
- (c)* Aircraft registration, type and model;
- (d)* Type of flight - IFR, VFR Night;
- (e)* Pilot-in-command name;
- (f)* Departure aerodrome;
- (g)* Destination aerodrome;
- (h)* Alternate aerodrome, if applicable;
- (i)* Routing to destination by successive navigational way points with associated tracks for each, or proposed area of operation;
- (j)* Routing to alternate aerodrome (IFR only, if applicable);
- (k)* Planned cruise altitudes;
- (l)* Planned cruise True Air Speed;
- (m)* Estimated time enroute and, if applicable, to alternate;
- (n)* Wind and temperature at cruise altitude;
- (o)* Fuel on board and fuel required;
- (p)* Cruise Ground Speed;

(q) Number of persons on board;

(r) Fuel burn enroute;

(s)* Weights:

(i) Zero fuel weight;

(ii) Fuel, cargo and passenger weight; and

(iii) Take-off weight; and

(t) Signature of pilot-in-command, the flight dispatcher, or an alternate means of certifying acceptance.

(amended 2008/12/30)

(3) Aircraft assigned to dedicated air ambulance operations may develop and use a modified operational flight plan provided an acceptable comparable system is shown.

(4) The operational flight plan shall permit the flight crew to record the fuel state and the progress of the flight relative to the plan.

(5) the air operator shall specify in its *Company Operations Manual* how formal acceptance of the operational flight plan for IFR and VFR at night flights is to be recorded.

724.24 VFR Flight Minimum Visibility - Uncontrolled Airspace

The standard for reduced VFR visibility limits of one half mile in uncontrolled airspace for helicopters is as follows:

(amended 1998/06/01)

(a) Pilot experience

(amended 1998/06/01)

Before conducting operations in reduced visibility, pilots shall have at least 500 hours of pilot-in-command experience in helicopters;

(b) Airspeed for operation in reduced visibility

(amended 1998/06/01)

Helicopters shall be operated at a reduced air speed that will provide the pilot-in-command adequate opportunity to see and avoid obstacles;

(c) Pilot training

(amended 1998/06/01)

The pilot shall have received training as follows:

(i) a one time attendance at a Transport Canada recognized Pilot Decision Making course which shall include, but not be limited to the following topics:

(A) Human Performance Factors, including modules on fatigue, hypoxia, nourishment, medication, balance and sight phenomena and limitations;

(B) The Decision Making Process, including modules on psychological factors, levels of performance, and “error trap” phenomena - (unsafe actions taken as a result of wrongful assumptions, unsafe conditions or practices);

(C) Human Error Countermeasures, highlighted by relevant case studies of past accidents; and

(D) Stress and its Symptoms, including modules on recognizing and dealing with perceived pressures, family related stress and job related stress; and

(ii) initial and annual recurrent flight training in procedures specified in the *Company Operations Manual* for operations in reduced visibility; and

(d) Company Operations Manual

(amended 1998/06/01)

The *Company Operations Manual* shall, in addition to the training procedures referred to in subparagraph (c)(ii) above, contain low visibility operational procedures and pilot decision making considerations for operation in visibility conditions of less than one mile. These considerations shall include, but not be limited to:

- (i) gross weight,
- (ii) wind,
- (iii) weather,
- (iv) route / terrain,
- (v) time of day,
- (vi) communications, and
- (vii) the potential for white-out.

724.26 Take-off Minima

(1) The standard for authorization for a take-off where the weather conditions are at or above take-off minima but below the landing minima is that a take-off alternate aerodrome which is within 60 minutes flying time at normal cruise shall be specified in the IFR flight plan.

(amended 2000/06/01)

(2) The standard for authorization for take-off in IMC below the weather minima specified in the *Canada Air Pilot* or in an equivalent foreign publication is as follows:

(a) the *Company Operations Manual* shall contain detailed guidance on how to determine departure one engine inoperative climb gradient and obstacle clearance;

(b) the take-off runway is equipped with:

- (i) serviceable and functioning high intensity runway lights, runway centre-line lights and centre-line markings that are plainly visible to the pilot throughout the take-off; and
- (ii) at least one transmissometer, situated at either the approach end or mid point of the take-off runway with a reading of not less than RVR 600 feet;

(c) the pilot-in-command is satisfied that the required RVR 600 feet visibility exists for the take-off runway and visual reference to the runway can be maintained at least until V_{toss} (take-off safety speed) and V_{mini} (instrument flight minimum speed) have been attained;

(d) the pilot-in-command and second-in-command attitude (artificial horizon) instruments incorporate pitch attitude index lines in appropriate increments above and below the zero pitch reference to at least 15 degrees and incorporate operative failure warning systems which will immediately detect essential instrument malfunction or failure; and

(e) the pilot-in-command, and the second-in-command if authorized by the air operator for RVR 600 feet take-off, shall have been checked conducting RVR 600 feet take-offs and rejected take-offs by an approved company check pilot or a Transport Canada Inspector within the preceding 12 months in a synthetic flight training device capable of visually depicting RVR 600 feet. The RVR 600 feet take-off certification shall be annotated on the Pilot Check Report form.

724.27 No Alternate Aerodrome - IFR Flights

Helicopter standard for authority to conduct an IFR flight when an alternate aerodrome has not been designated in the IFR flight plan or in the IFR flight itinerary is as follows:

(a) the *Company Operations Manual* shall contain guidance on the execution of no alternate IFR flights;

(b) flight following personnel are to be aware that the flight is operating no alternate IFR and shall have current weather readily accessible for timely communication to the flight;

(c) pilots-in-command are to be familiar with diversionary aerodromes;

(d) terminal forecasts and weather reports shall be available for the destination and shall indicate that, at the estimated time of arrival and for one (1) hour after the estimated time of arrival, there will be:

(amended 2003/06/01)

- (i) a ceiling of at least 1,000 feet above the airport elevation, or at least 400 feet above the lowest applicable approach minima, whichever is higher, and a visibility of at least two (2) statute miles.

(amended 2003/06/01)

724.28 VFR OTT Flight

(amended 1998/06/01)

The standard for VFR over-the-top flight for helicopters carrying passengers is:

(1) the flight shall be conducted in accordance with the requirements of Subpart 602 (Visual Flight Rules) of the *Canadian Aviation Regulations*;

(2) for IFR certified helicopters, where the pilot holds a group IV instrument rating, the flight shall be operated under conditions allowing, if an engine fails, descent under VMC conditions or continuation of the flight under IFR or VFR; and
(amended 2005/06/01)

(3) for helicopters not certified for IFR where the pilot holds a group IV instrument rating, the flight shall be operated under conditions allowing, if an engine fails, descent or continuation of the flight under VMC conditions.
(amended 2005/06/01)

724.29 Routes in Uncontrolled Airspace

The standard for establishing routes in uncontrolled airspace is:

(1) A minimum obstruction clearance altitude (MOCA) shall be established for each route segment by the use of aeronautical charts and the *Canada Flight Supplement* for updating of significant obstructions as follows:

(a) for flight under IFR a minimum altitude of 2000 feet above the highest obstacle located within a horizontal distance of 10 miles from the centre line of route, except where the flight is conducted offshore, in which case a minimum altitude of 1000 feet above the highest obstacle located within a horizontal distance of 3 miles from the centre line of the route may be used; and

(amended 1998/06/01)

(b) for flight at night in VFR conditions a minimum altitude of 1000 feet above the highest obstacle located within 3 miles from the centre line of the route.

(2) For each route segment a minimum enroute altitude (MEA) shall be established which meets or exceeds the minimum obstruction clearance altitude and assures navigational signal coverage. For line of sight navigation aid reception distance for ground installed aids, the minimum reception altitude may be calculated by calculating the square root of an altitude above the navigation aid and multiplying the result by 1.25 (Sq. root 3000 ft. is 54.7 x 1.25 = 68 miles). The MEA will be established to the nearest higher 100 foot increment.

(3) Each route shall include:

(a) the route segment;

(b) track;

(c) MOCA;

- (d) MEA;
- (e) distance between fixes or waypoints; and
- (f) navigation aids.

(4) The air operator shall maintain a record of their company routes in a form and format similar to the catalogue of approved company routes.

Provided the above procedures are followed, an air operator's pilot may use routes that are not yet contained in the record of company routes.

(5) Prior to initial use of other than publicly available navigation aids, permission of the owner/operator shall be obtained and retained in company records. No VFR at night or IFR flights shall commence unless the navigation aids upon which the route is predicated are in satisfactory operating condition. When company routes are predicated on other than a publicly available navigation aid and arrangements have not been made with the owner/operator to advise when the navigation aid is out of service, instructions to pilots shall be included on how, and whom to contact, to confirm the status of the navigation aid.

(6) The air operator's *Company Operations Manual* shall be amended to outline the above procedures and information for pilot guidance.

(7) The flight visibility shall not be less than 3 miles for flights in VFR at night.

724.31 Minimum Altitudes and Distances

(1) For air operator authority to operate a helicopter over a built-up area at altitudes and distances less than those specified in section 602.14 of the *Canadian Aviation Regulations* or to conduct a landing or take-off within the built-up area of a city or town a plan shall be submitted to the Transport Canada Aviation Regional Office in the region in which the flights are to take place at least five working days in advance of the operation and include:

(a) certification that the governing municipality have been informed of the proposed operation;

(amended 1998/06/01)

(b) purpose of the flights;

(c) dates, alternate dates and proposed time of day of the operation;

(d) location of the operation;

(e) type of aircraft to be used;

(f) altitudes and routes to be used and depicted on a map of the area;

(g) procedures and precautions to be taken to ensure no hazard is created to persons or property on the surface, including locations of forced landing areas in the event of an emergency; and

(h) name of contact person designated by the air operator.

(amended 1998/06/01)

(2) For operating certificate authority, the air operator shall submit an application providing the above information as applicable, show a requirement for operating certificate authority and amend its *Company Operations Manual* to include the routes and conditions for its use.

(amended 1998/06/01)

724.32 Weight and Balance Control

An air operator shall publish in its *Company Operations Manual* a system to ensure that during any phase of flight operations the loading, weight and centre of gravity of the helicopter complies with the limitations specified in the approved flight manual.

The weight and balance system shall:

(a) establish an operational empty weight and centre of gravity for each helicopter and configuration;

(b) establish passenger and cargo weight determination procedures. Weight of passengers and cargo may be determined by using approved standard weights or approved survey weights for passengers and actual weight of cargo;

(c) establish weights for calculation of fuel weight which may be determined using actual specific gravity or a standard specific gravity;

(d) provide weight and centre of gravity forms for calculation of maximum take-off and landing weights and calculation of longitudinal and lateral CG position;

(e) establish preparation and disposition requirements of weight and balance forms;

(f) establish loading procedures including floor loading limits and cargo restraint requirements; and

(g) provide for initial and annual system training to air operator personnel responsible for the weight and balance system.

The weight and centre of gravity computation may be incorporated into the operational flight plan form or be a separate form.

724.33 Apron and Cabin Safety Procedures**(1) Safe Movement of Passengers to and from Helicopters**

The procedures for the safe movement of passengers to and from the helicopter shall include:

- (a) wherever possible, helicopters are parked in a location that avoids passenger exposure to hazardous conditions;
 - (b) passengers are alerted to hazardous conditions;
 - (c) guidance, and where necessary an escort is provided to ensure passengers are directed along a safe route to or from the helicopter;
 - (d) an escort is assigned to control passenger movements when the route to or from the helicopter is congested by other aircraft or vehicles or when required by the Air Carrier Security Measures;
 - (e) passengers are not exposed to hazards from aircraft operations, refuelling equipment, exposure to jet blasts, engines, rotors or propellers, or to the hazards posed by lighting conditions, obstacles positioned along the route or unsafe surface or stairway conditions;
 - (f) smoking restrictions are enforced;
 - (g) personal headsets that are used with personal entertainment systems that decrease awareness of other traffic or limit reception of audible direction or warning signals, are not worn;
- (amended 1999/09/01)
- (h) the procedures shall be incorporated in training programmes and training will be provided to crew members, ground handling and passenger agent staff (including contract personnel) involved with the transfer of passengers between the terminal building and the helicopter; and
 - (i) the training will be adequate to ensure that personnel are fully aware of their responsibilities, are able to perform their assigned duties for the safety of passengers and know to whom the air operator personnel report in the application of their responsibilities. Where there is an overlap in the duties/responsibilities assigned to personnel, the training will ensure that the trainees know the relationship of their duties/responsibilities to those of the other personnel involved.

(2) Fuelling with Passengers on Board

Helicopters may be fuelled with passengers on board, embarking or disembarking under the following conditions:

- (a) In order to ensure that crew members receive prompt notification of a situation threatening safety such as fuel spill or a fire, two way communication is maintained

between the ground crew supervising the fuelling and the qualified personnel on board the helicopter so that the helicopter can be disembarked or evacuated as necessary.

(b) A means of communication among the qualified personnel on board the helicopter, ground/maintenance crews and fuelling agencies is determined and established and the procedures are provided to the appropriate personnel.

(c) The helicopter engines are not running.

(d) During the fuelling process:

(i) ground power generators or other electrical ground power supplies are not being connected or disconnected;

(ii) heaters installed on the helicopter are not operated;

(iii) other combustion heaters used in the vicinity of the helicopter are manufactured to CSA or ULC standards and approved in accordance with the Fire Commissioner of Canada for use in hazardous atmosphere;

(iv) known high energy equipment such as High Frequency (HF) radios are not operated, unless in accordance with the helicopter manufacturer's approved flight manual where the manual contains procedures for the use of this equipment during fuelling;

(v) weather-mapping radar equipment in the helicopter is not operated unless in accordance with the manufacturer's approved flight manual where the manual contains procedures for use during fuelling;

(vi) helicopter batteries are not being removed or installed;

(vii) external battery chargers are not being connected, operated or disconnected,

(viii) electric tools or similar tools likely to produce sparks or arcs are not being used, and;

(ix) photographic equipment is not used within 10 ft. (3m) of the fuelling equipment or the fill or vent points of the helicopter fuel systems.

(e) Fuelling is immediately suspended when there are lightning discharges within 8 km of the aerodrome.

(f) The helicopter is fuelled in accordance with manufacturer's procedures for that type of helicopter.

(g) The helicopter emergency lighting system is armed or on if so equipped.

(h) "No Smoking" signs on board the helicopter are illuminated if so equipped.

(i) Procedures are established to ensure that passengers do not smoke, operate portable electronic devices or otherwise produce sources of ignition.

(j) The designated evacuation exits during fuelling are identified by helicopter type and published in the *Company Operations Manual*, and are clear and available for use by passengers and crew members should an evacuation be required.

(k) The air operator has procedures in place to ensure that there is a ready escape route from each designated evacuation exit during fuelling.

(l) A qualified person trained in the operation and use of emergency exits and in emergency evacuation procedures is ready to initiate and direct an evacuation and is at or near the door.

(m) Where desirable for climatic reasons a boarding door may be closed, but may not be latched.

(3) Use of Portable Electronic Devices

(amended 1999/09/01)

The prohibited devices, the permitted devices without restrictions and the permitted devices with restrictions are defined as follows, and are to be used in accordance with the stated requirements as applicable:

(a) Prohibited devices:

Any transmitting device that intentionally radiates radio frequency signals;

(b) Permitted devices without restrictions:

(i) hearing aids;

(ii) heart pacemakers;

(iii) electronic watches; and

(iv) properly certificated air operator installed equipment;

(c) Permitted devices with restrictions:

(i) personal life support systems may be operated during all phases of flight, provided that the device does not cause interference with the helicopter's systems or equipment;

(ii) portable two-way radio communication devices may be used subject to all of the following conditions and restrictions being met:

(A) use is prohibited at all times when the helicopter engines are running, excluding the auxiliary power unit,

(B) when the pre-flight safety briefing begins prior to engine start, use is terminated during the delivery of the pre-flight safety briefing and demonstration, and

(C) the *Company Operations Manual* contains procedures to ensure these devices are turned off and properly stowed during the delivery of the pre-flight safety briefing and demonstration and while the helicopter engines are running;

(iii) other portable electronic devices may be used, except during take-off, climb, approach and landing.

(4) Passengers shall be informed of the air operator's policy pertaining to the use of portable electronic devices and those devices that are prohibited from use during the delivery of the pre-flight safety briefing and demonstration.

(amended 1999/09/01)

(5) When interference with the helicopter's systems or equipment is suspected from use of a portable electronic device, crew members shall:

(amended 1999/09/01)

- (a) confirm passenger use of portable electronic device(s);
- (b) instruct passenger(s) to terminate the use of portable electronic device(s);
- (c) prohibit the use of suspected portable electronic device(s); and
- (d) recheck the helicopter's systems and equipment.

(6) The pilot-in-command shall report incidents of portable electronic device interference and include the following information in the report:

(amended 1999/09/01)

(a) Flight Information - helicopter type, registration, date and UTC time of incident, helicopter location (VOR bearing/DIST/LAT/LONG), altitude, weather conditions, pilot name and telephone number;

(b) Description of Interference - description of effects on cockpit indicators, audio or systems, including radio frequency, identification, duration, severity and other pertinent information;

(c) Action Taken by Pilot/Crew to Identify Cause or Source of Interference;

(d) Identification of Portable Electronic device - description of device, brand name, model, serial number, mode of operation (i.e. FM radio), device location (seat location), and regulatory approval number (FCC/other);

(e) Identification of User - name and telephone number of passenger operating the device; and

(f) Additional Information - as determined pertinent by the crew; and

(7) Reports of portable electronic device interference shall be submitted to the Director, Safety Services, Transport Canada, Transport Canada Building, Place de Ville, Ottawa, Ontario K1A 0N8.

(amended 1999/09/01)

724.34 Briefing of Passengers**(1) Standard Safety Briefing**

The standard safety briefing shall consist of an oral briefing provided by a crew member or by audio or audio-visual means which includes the following information as applicable to the helicopter, equipment, and operation:

- (a) prior to embarking passengers, rotor running embarking and disembarking procedures;
- (b) prior to take-off:
 - (i) when, where, why and how carry-on baggage is required to be stowed;
 - (ii) the fastening, unfastening, tightening and general use of safety belts or safety harnesses;
 - (iii) when tables are to be stowed and seats secured in the upright position;
 - (iv) the location of emergency exits, exit location signs, and how the exit operates;
 - (v) the location, purpose of, and advisability of reading the safety features card;
 - (vi) the requirement to obey crew instructions;
 - (vii) the use, location, operation and deployment, as applicable, of emergency equipment such as life rafts, life preservers, ELT, survival equipment and first aid kit including means of access if in a locked compartment;
 - (viii) the air operator's policy on the use of portable electronic devices;
 - (ix) instructions for immersion suits;
 - (x) where applicable to wide body helicopters the method of egress in event of a roll-over accident by use of the under seat frame of the transverse cabin seats as a ladder for egress; and
 - (xi) any special instructions related to emergency evacuation if the helicopter is configured with external fixtures (e.g. ski racks);
- (c) after take-off, if not included in the pre take-off briefing:
 - (i) smoking is prohibited; and
 - (ii) the advisability of using safety-belts or safety harnesses during flight;
- (d) in-flight because of turbulence:
 - (i) when the use of seat belts is required; and
 - (ii) the requirement to stow carry-on baggage; and

(e) prior to disembarking of passengers, the safest direction and most hazard-free route for passenger movement away from the helicopter and any hazards associated with the helicopter type such as pitot tube locations, antennae, and rotors.

Where no additional passengers have boarded the flight for subsequent take-offs on the same day, the pre-take-off and after take-off briefing may be omitted provided a crew member has verified that all carry-on baggage is properly stowed, safety belts or harnesses are properly fastened, and seat backs and chair tables are properly secured.

(2) Individual Safety Briefing

The individual safety briefing shall include:

- (a) any information contained in the standard safety briefing and the safety features card that the passenger would not be able to receive during the normal conduct of that safety briefing; and
- (b) additional information applicable to the needs of that person as follows:
 - (i) the most appropriate brace position for that passenger in consideration of his/her condition, injury, stature, and/or seat orientation and pitch;
 - (ii) the location to place any service animal that accompanies the passenger;
 - (iii) for a mobility restricted passenger who needs assistance in moving expeditiously to an exit during an emergency:
 - (A) a determination of what assistance the person would require to get to an exit;
 - (B) the route to the most appropriate exit;
 - (C) the most appropriate time to begin moving to that exit; and
 - (D) a determination of the most appropriate manner of assisting the passenger;
 - (iv) for a visually impaired person:
 - (A) detailed information of and facilitating a tactile familiarization with the equipment that he/she may be required to use;
 - (B) advising the person where to stow his/her cane if applicable;
 - (C) the number of rows of seats between his/her seat and his/her closest exit and alternate exit;
 - (D) an explanation of the features of the exits; and
 - (E) if requested, facilitating a tactile familiarization of the exit;
 - (v) for a comprehension restricted person, while using the safety features card, point out the emergency exits and alternate exit(s) to use, and any equipment that he/she may be required to use;

(vi) for persons with a hearing impairment;

(A) while using the safety features card, point out the emergency exits and other equipment that the person may be required to use; and

(B) communicating detailed information by pointing, face-to-face communication permitting speech reading, pen and paper, through an interpreter or through their attendant;

(vii) for a passenger who is responsible for another person on board, information pertinent to the needs of the other person as applicable:

(A) in the case of an infant:

(I) seat belt instructions;

(II) method of holding infant for take-off and landing;

(III) instructions pertaining to the use of a child restraint system; and

(IV) recommended brace position; and

(B) in the case of any other person:

(I) instructions pertaining to the use of a child restraint system; and

(II) evacuation responsibilities; and

(viii) for an unaccompanied minor, instructions to pay close attention to the normal safety briefing and to follow all instructions.

A passenger that has been provided with an individual safety briefing need not be re-briefed following a change in crew if the crew member that provided the individual safety briefing has advised a member of the new crew of the contents of that briefing including any information respecting the special needs of that passenger.

A passenger may decline an individual safety briefing.

(3) Passenger Preparation for an Emergency Landing

The emergency briefing provided in the event of an emergency where time and circumstances permit shall consist of instructions pertaining to:

(a) safety belts or safety harnesses;

(b) seat backs and tables;

(c) carry-on baggage;

(d) safety features cards;

(e) brace position (when to assume, how long to remain);

- (f) if applicable, life preservers; and
- (g) if applicable, evacuation procedures for an occupant of a child restraint system.
(amended 1999/09/01)

724.35 *Safety Features Card*

The safety features card shall contain the following information as applicable to the helicopter and equipment carried:

- (a) general safety information including:
 - (i) smoking restrictions;
 - (ii) each type of safety belt or safety harness installed for passenger use, including when to use, and how to fasten, tighten and release; and
 - (iii) when and where carry on baggage must be stowed; and any other related requirements and restrictions pertinent to that particular helicopter;
- (b) emergency procedures and equipment including:
 - (i) location of first aid kits;
 - (ii) location of fire extinguishers that would be accessible to the passengers;
 - (iii) location of Emergency Locator Transmitters;
 - (iv) location of survival equipment, and if the stowage compartment is locked, the means of access or location of the key;
 - (v) passenger brace position for impact, as appropriate for each type of seat and restraint system installed for passenger use; including the brace position for an adult holding an infant;
 - (vi) method of egress in event of a roll-over accident;
 - (vii) the location, operation and method of using each exit type on the helicopter, including identification of those emergency exits known to be rendered unusable in a ditching or because of helicopter configuration;
 - (viii) the safest direction and most hazard-free escape route for passenger movement away from the helicopter following evacuation;
 - (ix) the attitude of the helicopter while floating;
 - (x) location of life preservers, flotation devices and correct procedures for removal from stowage/packaging; donning and use of the life preservers for adult, child and infant users including when to inflate; and
 - (xi) location and use of life rafts;

(c) The safety card shall bear the name of the air operator and the helicopter type and shall contain only safety information; and

(d) The safety information provided by the card shall:

(i) be accurate for the helicopter type and configuration in which it is carried and in respect of the equipment carried;

(ii) be presented with clear separation between each instructional procedure. All actions required to complete a multi-action procedure to be presented in correct sequence and the sequence of actions to be clearly identified; and

(iii) be depicted in a clear and distinct manner.

DIVISION IV - AIRCRAFT PERFORMANCE OPERATING LIMITATIONS

There are currently no standards published for this division.

DIVISION V - HELICOPTER EQUIPMENT REQUIREMENTS

There are currently no standards published for this division.

DIVISION VI - EMERGENCY EQUIPMENT

724.84 Equipment Standards and Inspection

(1) Survival Equipment - Flights Over Land

The *Company Operations Manual* shall:

(a) show how compliance with Section 602.61 of the *Canadian Aviation Regulations* is to be achieved;

(b) list equipment on board, information on how to use it and include, as appropriate for the season and climate, a survival manual; and

(c) include crew member training in accordance with paragraph 724.115(3)(c).

(2) Survival Equipment - Flights Over Water

Where life rafts are required to be carried in accordance with Section 602.63 of the *Canadian Aviation Regulations* they shall be equipped with an attached survival kit containing at least:

(a) pyrotechnic signalling devices;

(b) whistle, signalling mirror and dye marker;

(c) a waterproof flashlight;

- (d) a raft inflation pump and raft knife;
- (e) a bailing bucket, sponge and liferaft repair kit;
- (f) a radar reflector;
- (g) a fishing kit and sea survival manual;
- (h) a two day water supply calculated using the overload raft capacity and consisting of one pint of water per day per person or a means of desalting salt water to equivalent amount; and
- (i) a first aid kit containing antiseptic swabs, burn dressing compresses, bandages and motion sickness pills.

(3) First Aid Kits

For the purposes of section 704.84 of the *Canadian Aviation Regulations*, a first aid kit required by section 602.60 of the *Canadian Aviation Regulations* shall contain the supplies and equipment for a Type A kit set out in Part X, Schedule II of the *Aviation Occupational Safety and Health Regulations*. In addition, each kit shall contain one pair of protective non-permeable gloves made of latex or equivalent material.

(amended 2001/06/01)

DIVISION VII - PERSONNEL REQUIREMENTS

724.108 Crew Member Qualifications

(1) Pilot Proficiency Check

- (a) The pilot proficiency check shall be conducted in accordance with the Pilot Proficiency Check Requirements of this subsection.
- (b) A pilot proficiency check shall be conducted in a manner that enables the pilot to demonstrate the knowledge and the skill respecting:
 - (i) the helicopter, its systems and components;
 - (ii) proper control of airspeed, direction, altitude, attitude and configuration of the helicopter, in accordance with the procedures and limitations set out in the operating manual where applicable, the helicopter flight manual, the air operator's *Company Operations Manual*, the air operator's standard operating procedures, the check list, and any other information relating to the operation of the helicopter type;
 - (iii) departure, enroute and arrival procedures and other applicable procedures; and
 - (iv) Each manoeuvre or procedure within a phase of flight specified in the Pilot Proficiency Check shall be performed in the helicopter or approved synthetic flight training device.

(c) A pilot-in-command check shall be completed in the seat normally occupied by the pilot-in-command.

(amended 1998/06/01)

(d) A Transport Canada inspector or an approved company check pilot shall determine whether a person has demonstrated the knowledge and the skill in accordance with the following factors:

- (i) the pilot's adherence to approved procedures; and
- (ii) the pilot's qualities of airmanship in selecting a course of action.

(e) During the pilot proficiency check the person conducting the check may request any manoeuvre or procedure from the Schedule to this section required to determine the proficiency of the candidate.

(f) Where the pilot is required to hold an instrument rating, the PPC shall include the instrument procedures portion of the schedule. This shall constitute the issue or renewal of the instrument rating. Where more than one type which requires an instrument rating is flown, the PPC on only one of these types need include instrument procedures.

(g) Synthetic flight training device (FTD) checking and training credits shall be approved by Transport Canada in the training program approval process for each helicopter type. Training and checking procedures not approved for the FTD shall be completed in the helicopter.

(2) Use of Other Than an Air Operator Employee Pilot for Training and Checking

Authority may be given for other than an air operator employee pilot who has not completed the requirements of paragraphs 704.108(1)(b), (c), and (d) of the *Canadian Aviation Regulations* to act as a flight crew member when giving training, conducting line indoctrination and while flight crews are completing the minimum flight time requirements on a new helicopter type. The following are the conditions governing this authorization:

- (a) the air operator shall provide a resume on behalf of the pilot containing proof of background on helicopter type and recent experience appropriate to the assignment;
- (b) the pilot shall be the holder of an appropriate licence and ratings. Where the pilot holds a foreign pilot licence the licence and, as applicable, the instrument rating shall be validated by Transport Canada Aviation;
- (c) The pilot may be authorized to conduct pilot checks provided the requirements of the *Company Check Pilot Manual* are met with the exception of employment time with the air operator; and
- (d) A foreign licensed pilot may be granted authority only when a Canadian licensed pilot is not available.

HELICOPTER SCHEDULE - Pilot Proficiency Check

(1) Pre-flight Phase

(a) Flight Planning

- (i) a practical oral examination on applicable flight planning procedures, flight planning information sources and maintenance release procedures; and
- (ii) a practical oral examination on the helicopter flight manual including limitations, loading, weight and balance, applicable flight manual supplements and the significance and use of performance charts.

(b) Pre-flight Inspection

- (i) a visual and, as applicable, functional exterior and interior inspection of the helicopter to show a practical knowledge of the airframe, major components, systems and applicable servicing procedures;
- (ii) use of check lists and procedures including engine and system checks; and
- (iii) pre-flight checks of communications, navigation, electrical, flight instruments and ice protection systems as appropriate.

(2) Flight Phase

(a) Taxiing and Hover Manoeuvres

- (i) taxiing includes, when appropriate to the helicopter configuration, both ground and air taxi and, where a second-in-command is undergoing the pilot proficiency check, taxiing to the extent practical from the second-in-command position;
- (ii) taxiing in compliance with instructions issued by air traffic control or by the person conducting the pilot proficiency check;
- (iii) compliance with appropriate taxi, hover and pre-departure check procedures;
- (iv) 360 degree hover turns, sideward and rearward hovering manoeuvres and, when practical, out of wind stationary hovering;
- (v) landing from a hover to a sloped surface and take-off to a hover from a sloped surface; and
- (vi) landing following simulated engine failure during hover or air taxi.

(b) Departure, Air Work, Approaches

- (i) normal transition to forward flight, climb to assigned altitude and normal approach and landing;
- (ii) for single-engine and multi-engine helicopters a take-off with a rapid deceleration or rejected take-off procedure;
- (iii) for multi-engine helicopters a simulated failure of one engine during take-off that will allow continued climb in forward flight;
- (iv) at assigned altitude climbs, descents and level flight throughout the normal speed range of the helicopter including steep turns with a change of heading of at least 180 degrees but not more than 360 degrees;
- (v) for single-engine helicopters autorotation approaches terminating at a pre-determined area in a landing or power recovery. At least one approach shall require a turn during autorotation descent through at least 180 degrees;
- (vi) for multi-engine helicopters a simulated engine failure at assigned cruise altitude and an approach and landing with one engine inoperative;
- (vii) confined landing area procedure and approach terminating in a landing, hover or rejected approach and, when practical, a confined area departure; and
- (viii) steep approach which may be combined with the confined area procedure.

(c) Instrument Procedures

Instrument procedures will consist of IFR pre-flight preparation, departure and enroute procedures, terminal procedures and system malfunctions.

- (i) instrument take-off so that instrument flight conditions are entered or simulated at or before reaching an altitude of 200 feet above take-off elevation;
- (ii) an area departure and an area arrival procedure where the pilot:
 - (A) adheres to actual or simulated air traffic control clearances and instructions; and
 - (B) properly uses available navigation facilities;
- (iii) a holding procedure that may be combined with an area arrival or departure and includes entry to, maintaining of and leaving a holding pattern;
- (iv) at least two instrument approaches performed in accordance with procedures and limitations for the approach facility used;

(v) at least one missed approach procedure and at least one landing after transition from an instrument approach procedure; and

(vi) emergencies and system malfunctions may be simulated during any phase of the flight.

(d) Normal and Abnormal Procedures

The pilot shall demonstrate use of as many of the normal and abnormal procedures for installed systems, devices and aids as the person conducting the check find necessary to determine that the pilot has the knowledge and ability to properly use installed equipment such as:

- (i) anti-icing and de-icing systems;
- (ii) automatic flight control and auto-pilot systems; and
- (iii) weather radar.

(e) Emergency Procedures, Malfunctions and Flight Characteristics

(i) Emergency and Malfunctions

The pilot shall demonstrate or where demonstration is impractical, show knowledge of, proper procedures for as many of the emergency situations and malfunctions listed below as necessary to determine adequate knowledge and ability:

- (A) fire in flight;
- (B) smoke control;
- (C) anti-torque control failure and malfunctions;
- (D) emergency descent;
- (E) hydraulic and electrical system failures and malfunctions;
- (F) flight instrument system failure and malfunction; and
- (G) any emergency procedure included in the flight manual or helicopter operating manual.

(ii) Flight Characteristics

The pilot shall show a practical knowledge of:

- (A) settling with power, vortex ring state and dynamic rollover to determine that the pilot is aware of causes, prevention and appropriate recovery procedures; and
- (B) applicable flight characteristics peculiar to the helicopter type and configuration.

724.109 *Qualifications of Operational Control Personnel*

A person shall successfully complete the training program outlined in Section 724.115 for a position in operational control.

724.111 *Crew Member Validity Period*

(1) Where a flight crew member's training has expired for a period of 24 months or more, that crew member shall successfully complete the air operator's initial training program on the type of helicopter.

(2) Where a flight crew member's pilot proficiency check has expired for a period of 24 months or more, that flight crew member shall, following completion of the air operator's initial helicopter type ground and flight training, successfully complete the pilot proficiency check on the type of helicopter.

DIVISION VIII - TRAINING

724.115 *Training Program*

The syllabus of each training program shall include the programmed time allotted and the subject matter to be covered.

(1) General Training Standard

- (a) manuals, if applicable, shall be provided during training to each trainee on the subject matter to be taught;
- (b) relevant training aids such as fire extinguishers, life preservers, rafts, aircraft components, static aircraft, etc. shall be available relevant to the program being presented; and
- (c) comprehensive examinations shall be used to validate competence of the trainee.

(2) Flight Crew Training on a Contract Basis

An air operator may contract crew member training to another organization provided:

- (a) the arrangement is clearly provided for in the approved training program;
- (b) the outside organization uses the manuals and publications used by the air operator (SOP's, Aircraft Flight Manual, Aircraft Operating Manual, if applicable, *Company Operations Manual*, etc.);
- (c) the air operator ensures that the training is conducted in accordance with the approved program;

(d) where type training is conducted the training is provided on the type and model operated by the air operator unless otherwise provided for in the approved training program; and

(e) the air operator maintains training records as required by Subpart 704 of the *Canadian Aviation Regulations*.

(3) Training Facilities

Training facilities shall be adequate to ensure that training objectives can be achieved.

Facilities shall be:

(a) quiet and free of distractions;

(b) suitably lighted for the type of instructions to be given, e.g. lectures, slides and audio-visual;

(c) furnished with sufficient desks, chairs, chalkboards and other appropriate equipment; and

(d) equipped with training aids such as films, Vu-graphs, system components, audio-visual, helicopter manuals or computer based systems.

(4) Training and Qualifications of Training Personnel

(a) Instructor - Ground Training

(i) has satisfied the air operator that he/she has the knowledge and skills required to conduct the training; and

(ii) if conducting helicopter type training has successfully completed the ground school for the type of helicopter.

(b) Qualifications and Responsibilities of a Training Pilot (Flight)

(i) Qualifications

(A) hold the licence and ratings appropriate for the type of helicopter and type of operation;

(B) be qualified for line flying on the type of helicopter; and

(C) know the content of the *Rotorcraft Flight Manual*, *Aircraft Operating Manual* (if applicable), *Company Check Pilot Manual*, *Company Operations and Training Manuals* and the operator's Standard Operating Procedures for the helicopter type, and the provisions of the regulations and standards.

(ii) Responsibilities

The Training Pilot is responsible for monitoring the operation and identifying problems which may require the provision of extra training or changes in operational procedures. The training pilot is responsible, together with the Chief Pilot, for the establishment and promulgation of the standards and piloting techniques with which flight crew will be expected to comply during flight operations and which the flight crew will be required to demonstrate during initial and recurrent checks. Particular responsibilities are:

- (A) conducting ground, synthetic flight training device and flight training of all flight crew in accordance with the approved training program;
- (B) supervision of the standards and recommending amendments to their respective helicopter operating manuals and standard operating procedures;
- (C) maintaining the air operator's training records;
- (D) liaison with crew scheduling concerning training details; and
- (E) any responsibilities assigned by the Chief Pilot.

(c) Qualifications and Responsibility of a Training Pilot (Synthetic Training Device)**(i) Qualifications**

- (A) hold or have held the licence and ratings appropriate for the type of helicopter and type of operation;

(amended 1998/06/01)

- (B) have completed the air operator's ground school and synthetic training device program for the type of helicopter;
- (C) have successfully completed within the past 12 months a pilot proficiency check in the synthetic training device or helicopter for that type;
- (D) know the contents of the Aircraft Operating Manual (if applicable), *Rotorcraft Flight Manual*, Operations and Training Manuals and as applicable the *Company Check Pilot Manual* and the air operator Standard Operating Procedures for the helicopter type, and the provisions of the regulations and standards; and
- (E) have received instruction on the operation of the synthetic training device from an instructor qualified to operate the synthetic training device.

(ii) Responsibilities

The Training Pilot is responsible for monitoring the operation and identifying problems which may require the provision of extra training or changes in operational procedures. The training pilot is responsible, together with the Chief Pilot, for the establishment and promulgation of the standards and piloting techniques with which flight crew will be expected to comply during flight operations and which the flight crew will be required to demonstrate during initial and recurrent checks. Particular responsibilities are:

- (A) conducting ground and synthetic flight training of all flight crew in accordance with the approved training program;
- (B) supervision of the standards and recommending amendments to their respective helicopter operating manuals and standard operating procedures;
- (C) maintaining the air operator's training records;
- (D) liaison with crew scheduling concerning training details; and
- (E) any responsibilities assigned by the Chief Pilot.

NOTES:

(1) Requirements for the use of other than an air operator employee pilot for training and checking are in Section 724.108.

(2) The standard for air operator check pilots are those contained in the Company Check Pilot Manual (as amended).

(5) Training Program Standards

Ground training programs shall provide a means of evaluating the trainee after completion of the syllabus by completion of examination with a review and correction of any errors. Training examinations should be comprehensive, and periodically reviewed and updated.

Type training programs are to be titled as to the type of helicopter to which they apply and include the number of instructional hours to be provided. They should be performance oriented and stress the operation (normal, emergency and malfunctions) of the aircraft systems and equipment. Instruction related to components and systems that flight crews cannot control, influence or operate should be minimized.

(6) Company Indoctrination Training

This training is required upon employment for all persons assigned to an operational control function including base managers, pilots and persons responsible flight following. The program shall ensure that persons involved in control of flight operations are aware of their responsibilities, know company reporting relationships and are competent to fulfil their assigned duties related to flight operations. Company indoctrination training shall include as applicable:

- (a) *Canadian Aviation Regulations* and applicable Standards;
- (b) Air Operator Certificate and operating conditions;
- (c) company organization, reporting relationships and communication procedures, including duties and responsibilities of flight crew members and the relationship of those duties to other crew members;
- (d) flight planning and operating procedures;
- (e) fuelling procedures including procedures for fuelling with passengers on board and fuel contamination precautions;
- (f) critical surface contamination and safety awareness program;
- (g) passenger safety briefings and safe movement of passengers to/from the helicopter;
- (h) use and status of *Company Operations Manual* including maintenance release procedures and accident/incident reporting procedures;
- (i) use of minimum equipment lists (if applicable);
- (j) aircraft icing, and other meteorological training appropriate to the area of operations;
- (k) navigation procedures and other specialized operations applicable to the operator;
- (l) accident/incident reporting;
- (m) passenger on board medical emergency;
- (n) handling of disabled passengers;
- (o) operational control system;
- (p) weight and balance system procedures;
- (q) standard operating procedures (if applicable); and
- (r) pre-flight crew-member briefing.

(7) Technical Ground Training - Initial and Recurrent

This training shall ensure that each flight crew member is knowledgeable with respect to helicopter systems and all normal, abnormal and emergency procedures. The following subjects shall be included:

- (a) helicopter systems operation and limitations as contained in the helicopter flight manual and aircraft operating manual, and standard operating procedures;
- (b) operation of all equipment that is installed in all helicopter of the same type operated by the air operator;
- (c) differences in equipment that is installed in all helicopters of the same type in the air operators fleet;

- (d) applicable standard operating procedures for pilot flying and pilot not flying duties for normal, abnormal and emergency procedures for the helicopter;
- (e) helicopter performance and limitations; and
- (f) weight and balance procedures.

Technical ground training shall be conducted annually.

(8) Synthetic Flight Training Device

(a) A Synthetic Flight Training Device has two classifications:

- (i) Full flight simulator (FFS); and
- (ii) Flight Training Device (FTD).

(b) Transport Canada encourages operators to conduct training on a simulator, or to use a combination of training in a FTD and helicopter.

(9) Level A or B Training Program (if applicable)

amended 2008/12/30

An air operator with an approved Level A or B training program using a Level A or better FFS approved in accordance with the *Aeroplane and Rotorcraft Simulator Manual* is permitted to conduct most initial, upgrade and recurrent training in that simulator. Additionally, flight training in a helicopter must be carried out for general handling and landing manoeuvres for initial and upgrade training.

amended 2008/12/30

(a) The following training in standard operating procedures for normal, abnormal and emergency operation of the helicopter systems and components shall be carried out in the FFS:

- (i) use of checklists;
- (ii) flight crew co-operation, command and co-ordination;
- (iii) helicopter and cargo fire on the ground and while airborne;
- (iv) engine fire and failure;
- (v) effects of engine icing and anti-ice operation;
- (vi) take-off, landing and flight with the critical engine inoperative and engine inoperative performance capabilities;
- (vii) flight control failures and abnormalities;
- (viii) hydraulic, electrical and other system failures;
- (ix) failure of navigation and communication equipment;

- (x) pilot incapacitation - recognition and response during various phases of flight;
- (xi) steep turns (45° of bank), and other flight characteristics such as unusual attitudes (as applicable for initial and upgrade only);
- (xii) helicopter performance for climb, cruise, holding, descent and landing;
- (xiii) normal, and performance limited take-offs;
- (xiv) take-off and landing data calculations;
- (xv) rejected take-off procedures;
- (xvi) passenger and crew evacuation;
- (xvii) FMS, EGPWS, ACAS and specialized helicopter equipment (where available);
(amended 2008/12/30)
- (xviii) inadvertent encounters with moderate or severe in-flight icing conditions where the helicopter is certified for flight into known icing conditions (where available); and
(amended 2008/12/30)
- (xix) loss of pressurization and emergency descent (if applicable);
(amended 2008/12/30)

(b) Where the air operator seeks authorization for flight in IMC the following training in flight planning and instrument flight procedures shall be included:

- (i) departure, enroute, holding and arrival; and
- (ii) all types of instrument approaches and missed approaches in minimum visibility conditions using all levels of automation available (as applicable).

(c) In addition to the training in a Level A or B FFS Training Program, the following flight training on the helicopter type shall be carried out:

(amended 2008/12/30)

- (i) interior and exterior preflight checks;
- (ii) ground handling;
(amended 2008/12/30)
- (iii) hover, normal take-off, visual circuit (where possible) and landing;
- (iv) a simulated engine inoperative approach and landing;
- (v) simulated engine failure procedures during take-off and missed approach (at safe altitude and airspeed);
- (vi) no electronic glide slope approach and landing;

(vii) approaches where the simulator lacks the capability and
amended 2008/12/30

(viii) a simulated line flight comprising at least 2 sectors, one as pilot flying and another as pilot not flying
amended 2008/12/30

(d) If a Level A or better FFS has differences in performance, systems, or cockpit layout and configuration from the air operator's helicopter, additional training on these differences shall be provided.

amended 2008/12/30

9.1) Level C Training Program (if applicable)

amended 2008/12/30

(a) For the purpose of this provision, "similar helicopter" means helicopters listed in the Schedule to this subsection

(b) An air operator with an approved Level C training program using a Level C, or better, FFS approved in accordance with the *Aeroplane and Rotorcraft Simulator Manual* is permitted zero flight time training for candidates on initial training who have experience on a similar helicopter with the same operator or who have verifiable currency on a similar helicopter within the previous two years. Candidates who do not qualify shall undergo helicopter flight training in accordance with those items listed in paragraph 724.115(9)(c) above.

(c) In addition to those items of training required in paragraphs 724.115(9)(a) and (b), the training in an approved Level C, or better, FFS shall include

(i) manoeuvring of the helicopter on the ground

(ii) crosswind take-offs and landings to 100% of the published crosswind component

(iii) a visual training program in the flight simulator to ensure VFR flight skills, covering scenarios of dusk and night with variable weather and visibilities. This program shall include

(A) normal and crosswind take-offs, visual circuits and landings with variable wind, runway illusion and surface conditions

(B) engine inoperative approach and landing

(C) engine failure procedures during take-off and missed approach

(D) no electronic glide slope approach and landing, and

(E) approaches and landings with flight control failures and abnormalities

(iv) a simulated line flight comprising at least 2 sectors (one as pilot flying and another as pilot not flying)

(d) If a Level C, or better, FFS has differences in performance, systems, or cockpit layout and configuration from the air operator's helicopter, additional training on these differences shall be provided.

SCHEDULE - Full Flight Simulator Grouping Helicopters

(a) The following helicopters are "similar helicopters" for the purpose of FFS Grouping

- (i) Agusta 109 and 119, all model series;
- (ii) Bell 47, all model series (including Bell 47T)
- (iii) Bell 206, all model series (including 206 LT)
- (iv) Bell 222, 230 and 430, all model series
- (v) Bell 204, 205, 210 and 212, all model series
- (vi) Bell 212 and 412, all model series
- (vii) Enstrom F28, 280 and 480, all model series
- (viii) Eurocopter AS 350, AS 355 and EC 130, all model series
- (ix) Eurocopter SA 330, AS 332 and EC 225, all model series
- (x) Eurocopter SE 313/3130, SE 316/3160 and SA 313 thru 319 (Alouette II / Lama / Alouette III), all model series
- (xi) Eurocopter SA 360, SA/AS 365 and EC 155, all model series
- (xii) Eurocopter BK 117 and EC 145, all model series
- (xiii) Eurocopter BO 105, all model series
- (xiv) Hiller 12E and 12ET, all model series
- (xv) Hughes/Schweizer Models 269, 300, 330 and 333, all model series
- (xvi) McDonnell Douglas/Hughes 500(369), 520, 530 and 600, all model series
- (xvii) McDonnell Douglas MD 900, 901 and 902 Explorer, all model series
- (xviii) Sikorsky S 55 and S 55T, all model series
- (xix) Sikorsky S 58 and S 58T, all model series
- (xx) Sikorsky S 61 and S 62, all model series
- (xxi) Sikorsky S 70, all model series, and
- (xxii) Sikorsky S 76, all model series

(b) Any type of helicopter not shown in paragraph (a) above, has not been considered for similar grouping and should be treated separately

(9.2) Level D Training Program (if applicable)

amended 2008/12/30

(a) An air operator with an approved Level D training program using a Level D FFS approved in accordance with the *Aeroplane and Rotorcraft Simulator Manual* is permitted zero flight time training

(b) In addition to the training required for a Level C program, the following FFS training shall be carried out

(i) A VFR training program in the Level D FFS of at least 4 hours per crew (2 hours as pilot flying and 2 hours of pilot not flying) is required to ensure visual flight skills to cover either day or dusk and night with variable weather and visibility scenarios. This program shall include the following

(A) normal and crosswind take-offs, and visual circuits and landings, with variable wind, runway illusion and surface conditions

(B) engine inoperative approach and landing

(C) engine failure procedures during take-off and missed approach

(D) no visual aids approaches and landings, and

(E) approaches and landings with flight control failures and abnormalities

Information Note-

Where a pilot demonstrates a satisfactory level of performance in visual manoeuvres, the air operator may use the time specified in subparagraph 724.115(9.2)(b)(i) as additional training to that required by any of the Level C requirements

(ii) Simulated line flights of at least 2 sessions (2 sectors as pilot flying and 2 sectors as pilot not flying) are required. Pilot flying duties shall be carried out from the appropriate seat

(c) If a Level D FFS has differences in performance, systems, or cockpit layout and configuration from the air operator's helicopter, additional training on these differences shall be provided

(10) Reserved

amended 2008/12/30

(11) Helicopter Only Flight Training Program

Any simulated failures of helicopter systems shall only take place under operating conditions which do not jeopardize safety of flight.

(a) Standard Operating Procedures for normal, abnormal and emergency operation of the helicopter systems and components including:

- (i) use of checklists including interior and exterior pre-flight checks;
- (ii) manoeuvring of the helicopter on the ground (if applicable);
- (iii) aspects of flight crew co-operation, command and co-ordination;
- (iv) hover, normal take-off, visual circuit, approach and landing;
- (v) simulated helicopter and cargo fire on the ground and while airborne;
- (vi) simulated engine fire and failure;
- (vii) briefings on effects of airframe and engine icing and anti-ice operation;
- (viii) take-off, landing and flight with the critical engine simulated inoperative, and engine inoperative performance capabilities;
- (ix) approach and landing;
- (x) simulated hydraulic, electrical and other system failures;
- (xi) simulated flight control failures and degraded states of operation, while in-flight, and during take-off and landing (as applicable);
- (xii) simulated failure of navigation and communication equipment;
- (xiii) simulated pilot incapacitation - recognition and response;
- (xiv) steep turns (45° of bank) and other flight characteristics (as applicable for initial and upgrade only);
- (xv) helicopter performance for climb, cruise, holding, descent and landing;
- (xvi) normal and performance limited take-offs;
- (xvii) take-off data calculations;
- (xviii) simulated rejected take-off procedures;
- (xix) briefing on crew and passenger evacuation procedures; and
- (xx) other specialized equipment (where applicable).

(b) Flight planning and instrument flight procedures where the air operator is authorized for VFR flight at night or flight in IMC:

- (i) departure, enroute, holding and arrival; and
- (ii) all types of instrument approaches and missed approaches in simulated minimum visibility conditions, including circling approaches (where applicable) using all levels of automation available (as applicable).

(12) Emergency Procedures Training for Pilots

This training is required on an annual basis and shall include instruction in the location and operation of all emergency equipment. Training devices approved to simulate flight operating emergency conditions, static helicopters, ground demonstrations, classroom lectures, films or other devices may be used for training provided the method used ensures that each flight crew member is adequately trained in the operation or use of all emergency equipment. Where practical training is required, it shall be completed on initial training and every three years thereafter.

- (a) fire in the air and on the ground;
- (b) use of fire extinguishers including practical training;
- (c) operation and use of emergency exits including practical training;
- (d) passenger preparation for an emergency landing or ditching, (as applicable) including practical training;
- (e) emergency evacuation procedures including practical training;
- (f) donning and inflation of life preservers (when equipped) including practical training;
- (g) removal from stowage, deployment, inflation and boarding of life rafts/slide rafts (when equipped) including practical training;
- (h) pilot incapacitation including practical training;
- (i) hijacking, bomb threat and other security procedures; and
- (j) passenger on board medical emergency.

(13) Regaining Qualifications Training

For operators using an approved Level B, C, D FFS or the helicopter, the following must be completed for all pilots who have not maintained their recency qualifications in accordance with paragraph 704.108(1)(b) of the Canadian Aviation Regulations for a period between 90 and 180 days;

- (a) a briefing on changes that have occurred to the helicopter or its operation since the last flight; and

(b) three take-offs and landings (which may be carried out as part of a PPC where one has come due).

(14) Flight Follower Training

Persons assigned the duties of the flight follower shall receive training in at least the following:

- (a) company indoctrination;
- (b) duties and responsibilities;
- (c) communication procedures;
- (d) applicable regulations and standards;
- (e) flight preparation procedures as applicable to assigned duties;
- (f) procedures in the event of an emergency or overdue helicopter;
- (g) accident and incident reporting procedures; and
- (h) requirements of approved *Company Operations Manual* as applicable to the duties and responsibilities.

(15) Helicopter Surface Contamination Training

An approved surface contamination initial and recurrent training program is required for all operations personnel to ensure they are aware of hazards and procedures for ice, frost and snow critical contamination on helicopters. The training program shall include:

- (a) responsibility of pilot-in-command and other operations personnel;
- (b) regulations related to operations in icing condition;
- (c) weather conducive to ice, frost and snow contamination;
- (d) inspection before flight and removal of contamination;
- (e) in-flight icing recognition; and
- (f) hazards related to critical surface contamination of ice, frost and snow.

(16) Minimum Equipment List (MEL) Training

When a Minimum Equipment List (MEL) has been approved for use on a helicopter type, the air operator shall provide the following training to flight crew members, maintenance personnel and to persons exercising operational control, as applicable:
(amended 2004/12/01)

(a) training for maintenance personnel shall include instruction on those sections of the Maintenance Control Manual which address the MEL, placarding of inoperative equipment, maintenance release, and any other MEL related procedures;
(amended 2004/12/01)

(b) training for flight crew members and operational control personnel shall include instruction on the purpose and use of an MEL, air operator MEL procedures, elementary work as applicable, and responsibility of the pilot-in-command;
(amended 2004/12/01)

(c) recurrent training shall be conducted when required to ensure air operator personnel are aware of any changes to the MEL or MEL procedures.

(17) Transportation of Dangerous Goods

All training required by the Transportation of Dangerous Goods Regulations.

(18) Lower than Standard Take-off - Weather Minima RVR 600 feet

Authority to conduct 600 RVR take-offs shall be subject to approval of a training program using an approved synthetic training device for the type of helicopter to be used and capable of depicting RVR 600' take-off conditions. Training is required for the pilot-in-command only unless the air operator authorizes the second-in-command to conduct 600 RVR take-offs in which case the second-in-command shall complete the same training.

The training program shall include:

(a) take-off alternate requirements;

(b) one engine inoperative performance requirements;

(c) responsibility for obstacle clearance and visibility requirements;

(d) take-off runway requirements;

(e) helicopter equipment requirements;

(f) pilot qualification requirements; and

(g) training in the synthetic training device shall include normal take-offs under RVR 600' conditions and rejected take-offs under RVR 600' conditions including engine failures and system malfunctions.

(19) Lower than Standard Decision Height**Category 1 Instrument Landing System Approach Minima - Reported Visibility RVR 1200' - Decision Height 100'**

Authority to conduct approaches to 100' DH with 1200 RVR is subject to approval of a training program using an approved synthetic training device for the helicopter type to be used. The training device shall be capable of depicting IMC to 100' DH.

The training program shall include:

- (a) capabilities and limitations of the ILS and visual aids;
- (b) operational characteristics and limitations of the airborne system to be used such as the flight director, automatic approach coupler and systems and devices peculiar to the applicants installation such as missed approach guidance and failure warning systems;
- (c) individual crew duties including approach briefing, two pilot challenge and response communication rule, pilot incapacitation procedures and pilot monitored approach procedure with emphasis on need to continually monitor flight instruments until attitude and descent path have been visually assessed; and
- (d) training in the synthetic training device shall include effects of wind shear and turbulence, recognition and reaction to malfunctions encountered prior to and after reaching the missed approach point, ILS approaches to landings from 100'/1200 RVR conditions and missed approaches during which practical malfunctions and emergencies are introduced.

(20) Area Navigation Systems (RNAV)**(a) General Training**

(amended 2003/03/01)

(i) To qualify for use of RNAV systems on IFR operations an air operator shall have an approved flight crew training and qualifications program for use of the system. Flight crew shall have completed the appropriate training and have completed an in-flight check or an equivalent check in an approved synthetic training device. This qualification check shall be conducted by a Transport Canada inspector or an authorized air operator check pilot.

(ii) Training shall be in the following areas:

- (A) pre-flight;
- (B) normal operation of the system;
- (C) procedures for manually updating the system;
- (D) methods of monitoring and cross checking the system;
- (E) action in the event of discrepancy between systems and method of determining which is the most accurate or reliable system;

- (F) the procedure for regaining track after deliberate or accidental deviation from cleared track;
- (G) Standard Instrument Departure (SID), Standard Terminal Arrival Route (STAR), and terminal procedures (if applicable);
- (H) operation in areas of compass unreliability;
- (I) malfunction procedures, including re-synchronization (if applicable);
- (J) terminal procedures;
- (K) waypoint symbology, plotting procedures and record keeping duties/practices; and
- (L) post-flight.

(b) Ground Training - Non-Integrated Receivers (Panel Mount GPS Receivers)
(amended 2003/03/01)

An air operator shall ensure that the training program candidates are trained to proficiency in each of the elements associated with the following areas:

(i) Knowledge with respect to the following:

(A) the GPS system, including:

- (I) GPS system components and aircraft equipment;
- (II) the composition of satellite constellation;
- (III) the minimum number of satellites required for 2-D and 3-D navigation;
- (IV) the basic concept of satellite ranging;
- (V) factors affecting the accuracy of GPS signals; and
- (VI) the World Geodetic Survey 84 (WGS 84) datum and the effect of using any other datum;

(B) human factors applicable to the use of GPS and how errors may be reduced or eliminated;

(C) company standard operating procedures for using GPS units; and

(D) procedures for reporting GPS problems and database errors.

(ii) Ability to perform the following operational tasks:

- (A) select appropriate operational modes;
- (B) recall categories of information contained in the database;
- (C) predict RAIM availability;

- (D) enter and verify user defined waypoints;
 - (E) recall and verify database waypoints;
 - (F) interpret typical GPS navigational displays including latitude/longitude, distance and bearing to waypoint, course deviation indication (CDI), desired track (DTK), track made good (TMG), actual track (TK), cross track error and any other information appropriate for the equipment used;
 - (G) intercept and maintain GPS defined tracks;
 - (H) determine navigation information appropriate for the conduct of the flight including ground speed (GS), estimated time of arrival (ETA) for next waypoint and destination;
 - (I) recognition of waypoint passage;
 - (J) use of 'direct to' function;
 - (K) link enroute portion of GPS flight plan to approach;
 - (L) conduct SIDs, STARs, terminal area procedures and holds;
 - (M) retrieve, verify and conduct GPS stand alone approaches; and
 - (N) conduct GPS missed approaches.
- (iii) Ability to conduct the following operational and serviceability checks:
- (A) database currency and area of operation;
 - (B) receiver serviceability;
 - (C) RAIM status;
 - (D) CDI sensitivity;
 - (E) position indication; and
 - (F) number of satellites acquired and, if available, satellite position information.
- (iv) Ability to recognize and take appropriate action for all GPS warnings and messages including, where applicable:
- (A) "loss of RAIM"
 - (B) "2D navigation"
 - (C) "In Dead Reckoning Mode"
 - (D) "database out of date"
 - (E) "GPS fail"
 - (F) "barometric input fail"

(G) "power/battery low" or "fail"

(H) "parallel offset on"; and

(I) "satellite fail".

(c) Ground Training - Integrated Receivers (Flight Management Systems)

(amended 2003/03/01)

An air operator shall ensure that the training program candidates are trained to proficiency in each of the elements associated with the following areas:

(i) Knowledge with respect to the following:

(A) the GPS system and theory of operation, including:

(I) GPS system components and aircraft equipment;

(II) the composition of satellite constellation;

(III) the minimum number of satellites required for 2-D and 3-D navigation;

(IV) the basic concept of satellite ranging;

(V) factors affecting the accuracy of GPS signals; and

(VI) the WGS84 datum and the effect of using any other datum; and

(B) human factors applicable to the use of GPS and how errors may be reduced or eliminated (i.e. maintaining situational awareness);

(ii) Ability to perform the following operational tasks:

(A) predict RAIM availability;

(B) link enroute portion of GPS flight plan to approach;

(C) conduct GPS stand alone approaches; and

(D) conduct GPS missed approaches;

(iii) Ability to conduct the following operational and serviceability checks:

(A) RAIM status;

(B) CDI sensitivity; and

(C) number of satellites acquired and, if available, satellite position information;

(iv) Ability to recognize and take appropriate action for all GPS warnings and messages including, where applicable:

(A) "loss of RAIM";

(B) "2D navigation";

- (C) "GPS fail";
- (D) "barometric input fail"; and
- (E) "satellite fail".

(d) Flight Training

(amended 2003/03/01)

- (i) Pilots shall complete flight training in the use of GPS for approach and other associated duties for each crew position they are authorized to occupy. Flight training may be completed in an aircraft, or in a level A or higher simulator that is equipped with the same model of GPS receiver (or a model determined by the Minister to be sufficiently similar) that is installed in the company aircraft.
- (ii) Flight training shall be conducted by a designated training pilot who has completed the company ground training program approved by the Minister, and demonstrated proficiency in the use of the model of GPS (or a model determined by the Minister to be sufficiently similar), to an approved check pilot.

(21) Transportability of Pilot Proficiency Check

Transportability of Pilot Proficiency Checks from one air operator to another is permitted subject to the hiring air operator providing the following training which shall be specified in the approved operations/training manual:

- (a) company indoctrination;
- (b) pilot ground and emergency procedures training on each type of helicopter the pilot is assigned, sufficient to cover the air operator procedures and equipment differences;
- (c) standard operating procedures review;
- (d) sufficient line indoctrination to allow the pilot to become familiar with the air operator routes and operational procedures. In no case shall this be less than two sectors over typical route segments that the air operator flies; and
- (e) the hiring air operator records the PPC validity and expiration date in company records.

(22) Survival Equipment Training

Training for all crew members shall include the following:

- (a) survival concepts;
- (b) contents of survival equipment kit; and
- (c) how to use the survival equipment carried on board the helicopter as appropriate for the operation.

(23) Aircraft Servicing and Ground Handling Training for Pilots**(a) fuelling procedures:**

- (i) types of fuel, oil and fluids used in the helicopter;
- (ii) correct fuelling procedures; and
- (iii) procedures for checking fuel, oil and fluids and proper securing of caps.

(b) use of tow bars;**(c) installation of protective covers on the helicopter; and****(d) procedures for operating in cold weather such as:**

- (i) moving the helicopter out of a warm hangar when precipitation is present;
- (ii) procedures for applying de-icing and anti-icing fluids for the helicopter type including critical flight controls post application inspections; and
- (iii) engine and cabin pre-heating procedures, including proper use of related equipment.

(24) Pilot Line Indoctrination

(a) Line Indoctrination Training applies to each helicopter type to which a flight crew member is assigned for IFR operations.

(b) During line indoctrination training a flight crew member shall be provided the following minimum experience while performing the duties appropriate to the crew member station. Sectors/hours acquired during proving or ferry flights may be counted towards this requirement. The number of flying hours and sectors apply to the pilot-in-command and to the second-in-command.

(c) A sector for line indoctrination training is a flight composed of a take-off, departure, arrival and landing including at least a 30 N.M. enroute segment.

(d) Flight crew members who have not completed line indoctrination in the same flight crew capacity on another helicopter type shall complete initial line indoctrination.

(e) Flight crew members who have completed line indoctrination in the same flight crew capacity on another helicopter type shall complete transition line indoctrination.

(f) Initial Line Indoctrination Training shall be conducted under the supervision of a flight training pilot and include at least 6 flight hours and 4 mandatory sectors. After completing 4 mandatory sectors the minimum flight hour requirement may be reduced by 1 hour for each additional sector flown to a maximum 50% reduction of the flight time requirement.

(g) Transition Line Indoctrination Training shall be conducted under the supervision of a flight training pilot and include at least 4 flights hours and 4 mandatory sectors. After completing 4 mandatory sectors the remaining minimum flight time may be reduced by 1 hour for each additional sector flown to a maximum 50% reduction of the flight time requirement.

(h) The following areas, as applicable, shall be covered in line indoctrination training and recorded as having been completed.

(i) Flight Crew Member Duties

- (A) use of check lists and crew member coordination;
- (B) pilot-in-command responsibilities and crew briefing; and
- (C) crew member responsibilities.

(ii) Helicopter and Equipment

- (A) aircraft documents;
- (B) manuals and log books;
- (C) MEL procedures, deferred defects and maintenance release;
- (D) FDR and CVR procedures;
- (E) normal and emergency exits - access, marking, lighting, operation;
- (F) fire extinguishers - location, use, serviceability;
- (G) fire axe - location and access;
- (H) first aid kit - location and serviceability;
- (I) survival equipment - stowage, contents, access;
- (J) life preservers - serviceability, access, stowage;
- (K) immersion suits; and
- (L) ELT - location and test procedures.

(iii) Flight Authorization

- (A) flight and duty time limitations;
- (B) weight and balance control, loading;
- (C) weather minima;
- (D) IFR and night VFR routes in uncontrolled airspace;

(E) Flight Following and Flight Watch; and

(F) flight planning and fuel requirements.

(iv) Operation of Flight

(A) helicopter servicing and ground handling;

(B) embarking passengers;

(C) passenger briefing;

(D) start, after start and pre-flight checks;

(E) departure procedures;

(F) enroute - fuel management, use of navigation aids, diversion;

(G) approach procedure - altimeter setting, wind, checks;

(H) hover manoeuvring and landing - landing checks;

(I) helicopter shutdown procedures;

(J) maintenance logs and flight records;

(K) disembarking passengers:

(I) emergency briefing and evacuation;

(II) forced landing and ditching; and

(III) malfunction procedures.

(25) Aerodrome and Area of Operation Qualifications

An air operator shall ensure that pilots-in-command are qualified for the areas of operation to which they are assigned and have received training, as applicable, to ensure safe operations are conducted.

(a) Area Qualifications

(i) seasonal meteorological conditions;

(ii) weather phenomenon related to whiteout, blowing snow;

(iii) communications, air traffic facilities, flight following facilities;

(iv) navigation facilities and procedures;

(v) survival equipment requirements;

(vi) mountain flying techniques; and

(vii) restrictions over built-up areas.

(b) Aerodrome Qualifications

- (i) remote area unprepared landing sites - reconnaissance procedures, inclined sites, confined areas;
- (ii) use of offshore heliports and helidecks;
- (iii) use of elevated heliports;
- (iv) use of air ambulance heliports;
- (v) flight watch facilities; and
- (vi) aerodrome operating minima.

(26) Persons Assigned on Board Duties

Where an air operator has assigned on board duties to a non-flight crew member, that person shall be given adequate initial and annual training to perform the procedures relevant to the duties with which the person is to be involved including, as applicable:

- (a) authority of the pilot-in-command;
- (b) means of communication;
- (c) a general description of the helicopter in which the person is to serve and the proper use of cabin installed systems controls;
- (d) procedures for the handling of normal, abnormal, and emergency situations including:
 - (i) safe movement in the vicinity of the helicopter and safe movement to and from the helicopter;
 - (ii) briefing of passengers;
 - (iii) handling of passengers;
 - (iv) securing of cabin;
 - (v) location, operation and use of emergency, life saving and survival equipment carried, including practical training;
 - (vi) fire fighting, including practical training;
 - (vii) decompression;
 - (viii) location, operation and use of emergency exits, including practical training;
 - (ix) passenger preparation for an emergency landing or ditching, including practical training; and
 - (x) evacuation, including practical training; and
- (e) knowledge of the relationship of the procedures with respect to those of the other crew members.

(27) Controlled Flight into Terrain (CFIT) Avoidance Training

Air operators shall provide the following initial and biennial CFIT avoidance training to all flight crew members operating helicopters approved for operation under instrument meteorological conditions:

(amended 2000/06/01)

- (a) factors that may lead to CFIT accidents and incidents;
- (b) CFIT prevention strategies; and
- (c) methods of improving situational awareness.

DIVISION IX - MANUALS**724.121 *Contents of Company Operations Manual***

The *Company Operations Manual* shall contain at least the following, as applicable to the operation:

- (a) preamble relating to use and authority of manual;
- (b) a table of contents;
- (c) amending procedures, amendment record sheet, distribution list and list of effective pages;
- (d) a copy of the Air Operator's Certificate and operations specifications;
- (e) a chart of the management organization;
- (f) the duties, responsibilities and succession of command of management and operations personnel;
- (g) description of operational control system including:
 - (i) flight authorization and flight preparation procedures;
 - (ii) preparation of operational flight plan and other flight documents;
 - (iii) procedures to ensure the flight crew are advised, prior to dispatch, of any aeroplane defects that have been deferred, (by Minimum Equipment List or any other means);
 - (iv) flight following and communication requirements;
 - (v) dissemination procedures for operational information and acknowledgement;
 - (vi) fuel and oil requirements;
 - (vii) weight and balance system;
 - (viii) accident/incident reporting procedures and procedures for reporting overdue aircraft;

- (ix) use of checklists;
- (x) maintenance discrepancy reporting and requirements of completion of flight; and
- (xi) retention period of operational flight plans;
- (h) sample of operational flight plan, weight and balance form and retention period;
- (i) CVR procedures;
- (j) operating weather minima and applicable requirements for IFR, VFR, VFR at night, VFR over-the-top including alternate aerodrome requirements;
- (k) instrument and equipment requirements;
- (l) instrument approach procedures (including company approaches), and alternate minima requirements;
- (m) procedures for establishing company routes in uncontrolled airspace;
- (n) procedures pertaining to enroute operation of navigation and communication equipment (including collision avoidance procedures);
- (o) operations in hazardous conditions such as icing, thunderstorms, white out, windshear;
- (p) helicopter performance limitations;
- (q) carriage and securing of cargo, carry on baggage, commissary and equipment (as applicable);
- (r) passenger briefing procedures;
- (s) use of aircraft flight manual, helicopter operating manual, standard operating procedures and minimum equipment lists (as applicable);
- (t) ice, frost and snow critical surface contamination procedures;
- (u) procedures of carriage of dangerous goods;
- (v) fuelling procedures including:
 - (i) fuel contamination precautions
 - (ii) bonding requirements
 - (iii) fuelling with engine running (not permitted with passengers on board, see Section 602.09 of the *Canadian Aviation Regulations*); and
 - (iv) fuelling with passengers on board;
- (w) list of emergency survival equipment carried on the helicopter and how to use equipment;

- (x) emergency procedures for:
 - (i) emergency locator transmitter;
 - (ii) passenger preparation for emergency landing/ditching;
 - (iii) emergency evacuation;
 - (iv) ground emergency coordination procedures; and
 - (v) unlawful interference;
- (y) minimum flight crew members required and flight crew member qualifications;
- (z) flight duty time limitations and rest requirements;
- (a-a) training programs including copy of company training and qualification record form(s);
- (b-b) operational support services and equipment;
- (c-c) passenger and cabin safety procedures.
- (d-d) inspection details and frequency of inspection of emergency equipment carried on board the helicopter;
- (e-e) policy on occupation of observer seat (if applicable);
- (f-f) procedures for reduced VFR limits in uncontrolled airspace (if applicable);
- (g-g) copies of all forms utilized including sufficient instruction on form completion; and
- (h-hi) other information related to safety.

724.123 Aircraft Operating Manual

A helicopter operating manual shall consist of the following:

- (a) table of contents;
- (b) list of effective pages;
- (c) amending procedures;
- (d) preamble;
- (e) identification of the helicopter by the type and registration it is applicable to; and
- (f) helicopter operating procedures and limitations that are not less restrictive than those contained in the rotorcraft flight manual and the *Canadian Aviation Regulations* (as amended).

724.124 Standard Operating Procedures (SOP's)

The Standard Operating Procedures Manual shall contain the following information for each type of helicopter operated. Where there are significant differences in equipment and procedures between helicopters of the same type operated, the Standard Operating Procedures Manuals shall show the registration mark of the helicopter it is applicable to.

Required information, if contained in another publication carried on board the helicopter during flight, need not be repeated in the SOP.

The SOP shall include the following as applicable to the operation:

(1) General

- (a) table of contents;
- (b) list of effective pages;
- (c) amending procedure;
- (d) preamble;
- (e) communications;
- (f) crew coordination;
- (g) use of check lists;
- (h) standard briefings; and
- (i) standard calls.

(2) Normal Procedures

- (a) weight and balance control requirements;
- (b) ramp;
- (c) battery/APU engine starts;
- (d) taxi;
- (e) take-off and climb;
- (f) cruise;
- (g) descent;
- (h) approaches IFR, visual, VFR, and circling;
- (i) landing;
- (j) missed approach and balked landing procedures;
- (k) refuelling with passengers on board;

- (l) use of on board navigation and alerting aids; and
- (m) check lists.

(3) Abnormal and Emergency Procedures

- (a) emergency landings/ditching - with time to prepare and without time to prepare;
- (b) pilot incapacitation and two communication rule, (2 pilot crew);
- (c) bomb threat and hijacking;
- (d) engine fire/failure/shutdown;
- (e) fire, internal/external;
- (f) smoke removal;
- (g) rejected take-off; and
- (h) other abnormal and emergency procedures that are specific to the type of helicopter.



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CANADIAN AVIATION REGULATIONS

PART VII - COMMERCIAL AIR SERVICES

STANDARD 725 - AIRLINE OPERATIONS - AERPLANES

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NOTE

All amendments to the CARs will be indicated by the Coming into Force date, immediately following the amended text.

RECORD OF AMENDMENTS

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STANDARD 725 - AIRLINE OPERATIONS - AEROPLANES

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Foreword

These Commercial Air Service Standards outline the requirements for complying with Subpart 705 of the *Canadian Aviation Regulations*.

For ease of cross reference the divisions and numbers of the standard are assigned to correspond to the regulations, therefore Section 725.05 would reflect a standard required by Section 705.05 of the *Canadian Aviation Regulations*.

PART VII - COMMERCIAL AIR SERVICES

STANDARD 725 - AIRLINE OPERATIONS - AEROPLANES

DIVISION I - GENERAL

The standards under this subpart apply to every Canadian air operator engaged in commercial air services under Subpart 705 of the *Canadian Aviation Regulations*.

Definitions

The words and expressions used in these Standards have the same meaning as in the General Provisions in Part I of the *Canadian Aviation Regulations* with the following additions:

“deplane” - means disembark; an aeroplane is deplaned when passengers leave the aeroplane in the normal manner, as opposed to evacuating the aeroplane. (*débarquement*)

“designated evacuation exits during fuelling” - exits that are available for immediate use should an evacuation be required. (*issues désignées pour l'évacuation pendant le transfert de carburant*)

“evacuate” - the egress from an aeroplane in an emergency situation using all available emergency exits and assist means such as ropes, wings, evacuation slides, etc. (*évacuation*)

“fuelling” - means the act of transferring fuel into or out of an aeroplane fuel tank from or to an external supply. (*avitaillement ou reprise de carburant*)
(amended 2003/06/01)

“operations co-ordination” - means the exercise of authority by an air operator over its operating activities, excluding operational control. (*coordination des opérations*)

“precision runway monitor” - means Precision Runway Monitor (PRM) equipment and procedures that enable simultaneous independent approaches to be made in instrument meteorological conditions (IMC) to parallel or near-parallel runways with centrelines that are spaced less than 4,300 feet apart. (*surveillance de précision des pistes*)
(amended 2008/12/30)

DIVISION II - CERTIFICATION

725.07 Issuance or Amendment of Air Operator Certificate

(1) Application for an Air Operator Certificate

The following constitutes an application for an air operator certificate:

(a) form 26-0045, Airports - information required to determine the suitability of the base of operations, any sub-bases and all scheduled points. The operator shall be able to

demonstrate that operations are permitted at each base, sub-base or scheduled point. This will normally be done by providing written permission from the Local Airport Authority (LAA). Where the air operator cannot obtain written permission and operations have not been denied in writing by the LAA, access to the aerodrome shall be demonstrated by other means; such as facilities provided through a lease, contractual agreement, etc.;

(b) form 26-0046, Aircraft - information with respect to each aeroplane by registration;

(c) form 26-0047 Personnel - information on required personnel. These shall be supported by resumes and statements of qualification for each position;

(d) form 26-0048, Maintenance Facilities;

(e) Maintenance Control Procedures;

(f) Company Operations Manual;

(g) Standard Operating Procedures;

(h) Minimum Equipment List(s) (if applicable);

(i) nomination for Company Check Pilot (if applicable);

(j) form 26-0448, Cabin Safety (if applicable); and

(k) aeroplane crash charts (if the type has not previously been operated in Canada).

(2) Qualifications and Responsibilities of Managerial Personnel

(a) Operations Manager

(i) Qualifications

(A) holds or has held the appropriate licence and ratings for which a pilot-in-command is required to hold for one of the aeroplanes operated; or

(B) has acquired not less than 3 years related supervisory experience with an operator of a commercial air service whose flight operations are similar in size and scope; and

(C) demonstrates knowledge to the Minister with respect to the content of the operations manual, the air operator's certificate and operations specifications, the provision of the regulations and standards necessary to carry out the duties and responsibilities to ensure safety.

(ii) Responsibilities

The operations manager is responsible for safe flight operations. In particular, the responsibilities of the position include:

(A) control of operations and operational standards of all aeroplanes operated;

(B) the identification of operations coordination functions which impact on operational control (eg. maintenance, crew scheduling, load control, equipment scheduling);

- (C) supervision, organization, manning and efficiency of the following:
 - (I) flight operations;
 - (II) cabin safety;
 - (III) crew scheduling and rostering;
 - (IV) training programs; and
 - (V) safety management system;
(amended 2005/05/31)
- (D) the contents of the air operator's company operations manual;
- (E) the supervision of and the production and amendment of the company operations manual;
- (F) liaison with the regulatory authority on all matters concerning flight operations, including any variations to the air operator's operator certificate;
- (G) liaison with any external agencies which may affect air operator operations;
- (H) ensuring that the air operator's operations are conducted in accordance with current regulations, standards and air operator policy;
- (I) ensuring that crew scheduling complies with flight and duty time regulations, and that all crew members are kept informed of any changes to the regulations and standards;
- (J) the receipt and actioning of any aeronautical information affecting the safety of flight;
- (K) the dissemination of aeroplane safety information, both internal and external, in conjunction with the safety management system;
(amended 2005/05/31)
- (L) qualifications of flight and cabin crews;
- (M) maintenance of a current operations library; and
- (N) in his or her absence delegating all responsibilities for operational duties to another qualified individual, except that the knowledge requirements detailed under operations manager qualifications may be demonstrated to the air operator rather than the Minister.
(amended 2005/05/31)

(b) Chief Pilot**(i) Qualifications**

The Chief Pilot shall have the following qualifications:

(amended 2003/06/01)

(A) hold a valid Airline Transport Pilot Licence (aeroplanes), a valid Instrument Rating appropriate for the group of aeroplane and a type rating for at least one of the types of aeroplanes operated;

(B) have at least 3 years aeroplane experience (commercial operations experience not required) as pilot-in-command:

(amended 1998/03/23)

(I) of an aeroplane referred to in paragraph 705.01(a) of the *Canadian Aviation Regulations*; and

(amended 1998/03/23)

(II) in the weight group (more or less than 100,000 lbs) and type of operations (domestic / international, cargo / passenger);

(amended 1998/03/23)

(C) be qualified for line flying on one of the types of aeroplanes operated;

(D) demonstrate knowledge to the Minister with respect to the content of the *Company Operations Manual*, Training Manuals, Standard Operating Procedures, *Company Check Pilot Manual* (if applicable), and the provisions of the Regulations and Standards necessary to carry out the duties and responsibilities of the position; and

(E) the chief pilot's personal record in relation to aviation shall not include:

(amended 2003/06/01)

(I) any conviction under subsection 7.3(1) of the *Aeronautics Act*; or

(II) two or more convictions, occurring during separate unrelated events, under the *Canadian Aviation Regulations*.

(ii) Responsibilities

The chief pilot is responsible for the professional standards of the flight crews under his/her authority, and in particular:

(A) developing standard operating procedures;

(B) developing and/or implementing all required approved training programs for the air operator flight crews;

(C) issuing directives and notices to the flight crews as required;

(D) the operational suitability and requirements of all aerodromes and routes served by the air operator;

- (E) the actioning and distribution of accident, incident, and other occurrence reports;
- (F) the processing and actioning of any flight crew reports;
- (G) the supervision of flight crews;
- (H) assuming any responsibilities delegated by the Operations Manager; and
- (I) in his or her absence, all responsibilities for duties shall be delegated to another qualified individual, except that the knowledge requirements detailed under chief pilot qualifications may be demonstrated to the air operator rather than the Minister.

(c) Maintenance Manager

The maintenance manager shall be qualified in accordance with section 706.03 of the *Canadian Aviation Regulations*, Person Responsible for Maintenance Control System.

(d) Flight Attendant Manager

(i) Qualifications

A Flight Attendant Manager shall:

- (A) know such of the contents of the air operator's operations manual, air operator certificate and operations specifications as are necessary for the performance of the assigned duties;
- (B) know such of the provisions of the *Aeronautics Act*, the *Canadian Aviation Regulations* and Standards, as are necessary for the performance of the assigned duties; and
- (C) demonstrate to the Minister that the person has the ability to fulfil the responsibilities of the position.

(ii) Responsibilities

The Flight Attendant Manager is responsible for the professional standards of the cabin crews under his/her authority and in particular:

- (A) assuring a current and approved *Flight Attendant Manual* is in place;
- (B) assuring a current and approved flight attendant training program;
- (C) the issuance of directives and notices to the flight attendants as required;
- (D) the actioning and distribution of accident, incident, and other occurrence reports;
- (E) the processing and actioning of any cabin crew reports;
- (F) the supervision of flight attendants;
- (G) assuming any responsibilities delegated by the Operations Manager;
- (H) training of flight attendants in accordance with the approved training program;

- (I) the maintenance of flight attendant training records;
- (J) liaison with other company departments;
- (K) the development of safety features cards; and
- (L) in his or her absence, all responsibilities for duties shall be delegated to another qualified individual, except that the knowledge requirements detailed under flight attendant manager qualifications may be demonstrated to the air operator rather than the Minister.

(3) Emergency Response Plan (amended 2005/05/31)

The air operator emergency response plan required under paragraph 705.07(2)(l) shall include the following elements:

(amended 2005/05/31)

- (a) air operator policy;
- (b) air operator mobilization and agencies notification;
- (c) passenger and crew welfare;
- (d) casualty and next-of-kin coordination;
- (e) accident investigation on behalf of the air operator;
- (f) air operator team's response to the accident site;
- (g) preservation of evidence;
- (h) media relations;
- (i) claims and insurance procedures;
- (j) aeroplane wreckage removal; and
- (k) emergency response training.

(4) Operational Support Services and Equipment

The requirement for operational support services and equipment will be dependent on types of aeroplanes and the size and scope of the operation and shall include, as applicable:

- (a) operational control system requirements;
- (b) current flight operations publications including a copy of the *Aeronautics Act*, applicable *Canadian Aviation Regulations*, company operations manual, *Maintenance Control Manual/Maintenance Procedures Manual*, *Canada Flight Supplement*, *Water Aerodrome Supplement*, *Airplane Flight Manuals*, *Aircraft Operating Manuals*, *Standard Operating Procedures*, *Aeronautical Information Publication*, *Minimum Equipment Lists* and appropriate maps and charts;

- (c) issue or amendment of the operational flight plan, the ATC flight plan, required weather, NOTAMS and other information required for the flight;
- (d) handling of passengers, passenger security, and provisions for the handling of dangerous goods;
- (e) method for the calculation of cargo and baggage weight in accordance with section 705.38 of the *Canadian Aviation Regulations*;
- (f) facilities and procedures for servicing the aeroplane and the handling of aeroplane surface contamination;
- (g) WAT charts for the usable runways;
- (h) runway surface charts which include information on pavement classification number, length of the runway, clearways and stopways and associated obstacles within the immediate area;
- (i) ensurance of appropriate navigation and approach facilities for the use of the aeroplane concerned including associated maps, approach and landing charts;
- (j) system for accurate control and calculation of the weight and balance in accordance with section 705.38 of the *Canadian Aviation Regulations* and the transmission to the pilot-in-command;
- (k) maintenance control procedures including the handling of unserviceabilities and MEL procedures; and
- (l) method for the retention of records of weight and balance, passenger and baggage counts, fuel uplift, cargo weights.

725.08 Contents of Air Operator Certificate

(amended 1998/03/23)

(Navigation System Authorizations pursuant to 705.08(g)(vi))

(1) Minimum Performance Capability for Long Range Area Navigation System

(amended 1998/03/23)

In order to meet the requirements of this standard, a long range area navigation system shall have the following minimum performance capability:

- (a) a standard deviation of lateral track deviations of less than 6.3 nautical miles;
- (b) a proportion of the total flight time spent by the aeroplane 30 nautical miles or more from the cleared track of less than 5.3×10^{-4} ;

(c) a proportion of the total flight time spent by the aeroplane at or between 50 and 70 nautical miles from the cleared track of less than 1.3×10^{-4} ; and

(d) be capable of meeting the requirements of *FAA Document No. 8110.60*, GPS as a Primary Means of Navigation in Oceanic /Remote Operations where, under paragraphs 725.08(2)(c) and (d), a GPS receiver provides the only means of long range navigation.

(2) Authorizations

(amended 1998/03/23)

(a) Required Navigation Performance Capability (RNP) Airspace

The standard requirements for authorization to flight plan published high level fixed RNAV routes in Required Navigation Performance Capability (RNP) airspace, or to be accommodated by Air Traffic Control (ATC) on other routes using RNP separation criteria, are:

- (i) aeroplanes equipped with at least two independent navigation systems, one of which must be a long range area navigation system; and
- (ii) flight crew training on operation of the long range area navigation system in accordance with subsection 725.124 (27) of the *Commercial Air Service Standards*.

(b) Canadian Minimum Navigation Performance Specification (CMNPS) and RNP Airspace

The standard requirements for authorization to operate in Canadian Minimum Navigation Performance Specification (CMNPS) airspace, and to flight plan published high level fixed RNAV routes in Required Navigation Performance Capability (RNP) airspace, and to be accommodated by Air Traffic Control (ATC) on other routes using RNP separation criteria are:

- (i) aeroplanes with navigation equipment as follows:

(A) aeroplanes operating only in domestic airspace on high level airways equipped in accordance with paragraph 605.18 (j) of the *Canadian Aviation Regulations*;

(amended 1998/09/01)

(B) aeroplanes operating only in domestic airspace on company approved routes or direct routes that begin and end within reception range of ground based navaids equipped with at least two independent navigation systems, one of which being a long range area navigation system;

(C) aeroplanes operating in CMNPS airspace other than on high level airways, company approved routes and direct routings that begin and end within the reception range of ground based navaids equipped with two independent long range navigation systems.

- (ii) flight crew training on operation of the long range area navigation system(s) in accordance with subsection 725.124 (27) of the *Commercial Air Service Standards*.

(c) North Atlantic Minimum Navigation Performance Specification (NAT MNPS), CMNPS and RNP Airspace

The standard for authorization to operate in North Atlantic Minimum Navigation Performance Specification (NAT MNPS) airspace, CMNPS airspace, to flight plan published high level fixed RNAV routes in Required Navigation Performance Capability (RNP) airspace, and to be accommodated by Air Traffic Control (ATC) on other routes using RNP separation criteria are:

- (i) aeroplanes with navigation equipment as follows:

- (A) aeroplanes equipped with at least two independent long range area navigation systems;

- (B) aeroplanes equipped with at least two independent navigation systems, one of which being a long range area navigation system, may be approved for NAT MNPS operations restricted to routes approved for aeroplanes with one long range RNAV system;

- (C) aeroplanes equipped with at least two independent navigation systems based on short range ground transmitters may be approved for NAT MNPS operations restricted to routes approved for aircraft with no long range RNAV capability.

- (ii) flight crew training on operation of the long range area navigation system(s) in accordance with subsection 725.124 (27) of the *Commercial Air Service Standards*.

(d) Reduced Vertical Separation Minima (RVSM) Airspace

(amended 2003/03/01)

The standards for authorization to operate in Reduced Vertical Separation Minima (RVSM) airspace are:

(amended 2003/03/01)

- (i) the aircraft shall be certified in accordance with the *ICAO/FAA Document 91-RVSM* and meet the other applicable technical requirements of *ICAO NAT DOC 001*,

(amended 2003/03/01)

- (ii) the air operator shall comply with the *ICAO/FAA Document 91-RVSM* and meet the other applicable requirements of *ICAO NAT DOC 001*, and

(amended 2003/03/01)

- (iii) the flight crew training shall be in accordance with the requirements of subsection 725.124(53).

(amended 2003/03/01)

(e) Pacific Required Navigation Performance 10 (RNP-10) Airspace

(amended 2002/12/01)

The requirements for authorization to operate in Pacific RNP-10 airspace are as follows:

- (i) the aircraft is equipped with at least two independent long range navigation systems capable of meeting a position accuracy of +/- 10 NM or better for 95% of the flight time in RNP-10 airspace,
- (ii) an RNP-10 time limit is established for aircraft equipped with only Inertial Navigation Systems (INS) or Inertial Navigation Units (INU), in order to meet the Pacific RNP-10 accuracy requirements,
- (iii) the aircraft meets the technical requirements of the navigation element of *FAA Order 8400.12A, Required Navigation Performance 10 (RNP-10) Operational Approval*,
- (iv) flight crew training is provided on the operation of the long range area navigation systems in accordance with the training requirements set out in subsection 725.124(27), and
- (v) flight crew training is provided on operations in Pacific RNP-10 airspace in accordance with the training requirements set out in subsection 725.124(52).

(3) Instrument Approaches - Global Positioning System (GPS)

(amended 1998/09/01)

(a) The standard requirements for authorization to fly instrument approach procedures using only GPS navigation information are:

- (i) an operational evaluation in accordance with subsection 725.08(3)(b) has been completed by the Minister on each aircraft type/GPS/FMS model installation for which approach authorization is sought;
- (ii) an air operator has an approved flight crew training and qualifications program for use of the GPS/FMS system that meets the requirements of subsection 725.124; and
- (iii) standard operating procedures have been amended to reflect GPS approach operations and approved by the Minister (where required).

(b) The following items will be assessed in the operational evaluation prior to the approval of the operator's GPS approach standard operating procedures (where applicable) and training program. Identical installations of the same model of GPS in the same type of aircraft with the same operator do not need separate evaluations.

(i) Database

The geographical coverage area for the database shall be compatible with the type of operations conducted by the company. The air operator shall have procedures in place to ensure that the database will be updated in accordance with the appropriate data revision cycle. This shall include a contract with a database supplier and the inclusion, in the appropriate company manuals, of the person responsible for installing the updates in the aircraft. The company shall have a procedure in place for pilots to report database errors and for information on database errors to be passed on to other company pilots, the avionics manufacturer and the Minister.

(ii) Unit Installation and Operation

The handling and procedures associated with the GPS avionics shall be such that all operations required for GPS approach can be accomplished without an adverse impact on normal crew duties and responsibilities. GPS related tasks shall not consume the attention of the pilot not flying (PNF) during critical phases of flight (i.e. between the time the aircraft turns inbound on the final approach course and the time the aircraft is established in the climb configuration on a missed approach).

(iii) Control Display Unit (CDU) and Course Deviation Indicator (CDI) / Distance Display

If the GPS/FMS control unit is not adequately accessible from each pilot position, or if GPS course deviation and distance displays are not within the primary field of view at both pilot stations, air operators shall designate in the standard operating procedures the position that the pilot flying (PF) and pilot not flying (PNF) are required to occupy during GPS approach for that type of installation. Aircraft types that are certified for operation by two crew members shall have GPS course deviation and distance displays at each pilot station. An Operation Specification authorizing GPS approaches shall not be issued unless the PNF has a means acceptable, in the Minister's opinion, of monitoring the PF during an approach.

(iv) Distance Display on the HSI

Installations where GPS guidance information (course tracking, To/From and NAV flags) are switched onto the HSI for display, but the DME distance information is not switched out (i.e. DME distance rather than GPS distance is displayed continuously on the HSI even when GPS source is selected to HSI), shall require air operators, in their standard operating procedures for GPS approach, to deselect other NAV/DME sources to eliminate distance displays in the pilot's primary field of vision not related to the approach procedure being flown.

(v) Annunciation

Responses to system annunciation (including Receiver Autonomous Integrity Monitoring (RAIM) warnings), the means of selecting GPS track information to the CDI/HSI and the means of coupling GPS steering information to the aircraft automatic flight control system shall be compatible with the safe operation of the aircraft type/category. Standard operating procedures shall specify the procedure whereby the control unit is

programmed, approach waypoints are verified against an independent source, approach mode is armed, and cockpit NAV source and AFC guidance source switches are selected and verified. Any switch selection or programming errors that the Minister believes are likely to occur and that could lead to a serious incident shall, if possible, be identified and addressed in training and in the standard operating procedures. Otherwise, the installation shall not be approved for approach use.

(vi) Airborne Evaluation

The Minister shall observe the pre-flight and in-flight operation of the unit on at least one GPS approach and missed approach. If the PF is allowed to occupy either seat during GPS approaches, then one approach from each pilot position shall be demonstrated. An airborne evaluation in an aircraft must take place under VFR. Emphasis will be on crew co-ordination, pilot workload (PF and PNF), and switch selections.

4) Precision Runway Monitor (PRM) Approaches

amended 2008/12/30

The standard for authorization to operate an aircraft using precision runway monitor approaches is as follows:

(a) The aircraft shall be equipped with two independent very high frequency (VHF) communication radios;

(b) The air operator shall develop procedures in its company operations manual for the guidance of its personnel; and

(c) The flight crew training shall be in accordance with the requirements of subsection 725.124(55).

DIVISION III - FLIGHT OPERATIONS

725.16 Exceptions

Briefing to Persons on Board

(1) The pilot-in-command shall ensure that all passengers on board the aircraft are briefed before take-off with respect to:

- (a) the location and use of emergency and normal exits;
- (b) the location and use of safety belts;
- (c) the securing of seat backs, and, where applicable, chair tables;
- (d) the stowage of carry-on baggage;
- (e) where the aircraft is unpressurized and it is planned that the flight will require the use of oxygen by the passengers, the location and use of oxygen equipment; and
- (f) any prohibition against smoking.

(2) The pilot-in-command of an aircraft shall ensure that all passengers on the aircraft are briefed:

(a) in the case of an over-water flight, before commencement of the over-water portion of the flight, with respect to the location and use of personal flotation devices and life preservers; and

(b) in the case of a pressurized aircraft that is to be operated at an altitude above FL 250, before the aircraft reaches FL 250, with respect to the location and use of oxygen equipment.

(3) The pilot-in-command of an aircraft shall, before take-off, ensure that all passengers on the aircraft are provided with information respecting the location and use of any life raft that is required to be carried on board pursuant to section 602.63 of the *Canadian Aviation Regulations*.

725.20 Operational Control System

General

Operational control is the exercise of authority over the formulation, execution, and amendment of an operational flight plan in respect of a flight.

An air operator's organizational chart must clearly show that the commercial function of the air operator (operations co-ordination) has no direct link or no authority over the air operator's operational control system.

Operations conducted under Subpart 705 of the *Canadian Aviation Regulations* require a Type A, B or C operational control system.

Another organization may be contracted to exercise operational control on behalf of an air operator.

Definitions

“co-authority dispatch” - means the shared authority, between the pilot-in-command and the flight dispatcher in a Type A or B operational control system, for decisions respecting the operational flight plan prior to acceptance of the operational flight plan by the pilot-in-command. (*régulation des vols en co-responsabilité*)
(amended 2000/12/01)

“complex operations” - means operations where any two of the following conditions exist:

- * the air operator operates more than 6 aeroplanes having a passenger-seating configuration of 20 or more and a maximum gross take-off weight of 45,455 kg (100,000 lbs.) or more;
- * the air operator operates more than 18 flights (constituting 18 take-offs and 18 landings) per 24 hour period; and

- * the air operator's operations are mixed domestic and international. (*opérations complexes*)
- “flight following” - means the monitoring of a flight's progress, the provision of such operational information as may be requested by the pilot-in-command, and the notification of appropriate air operator and search-and-rescue authorities if the flight is overdue or missing. Meteorological information provided to the pilot-in-command by the flight follower shall not include analysis or interpretation. (*suivi des vols*)
- “flight watch” - means maintaining current information on the progress of the flight and monitoring all factors and conditions that might affect the Operational Flight Plan. (*surveillance des vols*)
- “pilot's self-dispatch” - means a flight where the pilot-in-command is solely responsible for Flight Watch. (*régulation des vols par le pilote*)

Application

(1) In order to meet its own operational needs, an air operator may choose to operate under an operational control system of a higher classification.

(2) Type A

A Type A classification shall apply to air operators carrying passengers in Airline Operations using more than 6 aeroplanes:

- (a) having a passenger-seating configuration of 20 or more;
- (b) having a maximum gross take-off weight of 45,455 kg (100,000 lbs.) or more; and
- (c) operating under complex operations.

(3) Type B

(a) A Type B classification shall apply to air operators carrying passengers in Airline Operations using aeroplanes:

- (i) having a passenger-seating configuration of 20 or more; and
- (ii) having a maximum gross take-off weight of less than 45,455 kg (100,000 lbs.).

(b) This classification shall also apply to air operators carrying passengers in Airline Operations using 6 or fewer aeroplanes:

- (i) having a passenger-seating configuration of 20 or more;
- (ii) having a maximum gross take-off weight of 45,455 kg (100,000 lbs.) or more; and
- (iii) not operating under complex operations.

(4) Type C

A Type C classification shall apply to air operators:

- (a) operating cargo-only aeroplanes; or
- (b) carrying passengers in Airline Operations when:
 - (i) operating aeroplanes having a passenger-seating configuration of less than 20;
 - (ii) operating 3 or less propeller-driven aeroplanes with a passenger-seating configuration of 20 or more but fewer than 60.

(5) Air operators using type A or B Operational Control systems for their passenger services may revert to a type “C” Operational Control system for cargo only operations provided that the cargo and passenger operations are outlined in separate sections within the Company Operations Manual with appropriate cross references.

(amended 1998/03/23)

(6) For purposes of this section, a combination of cargo and passenger flights will be considered passenger operations.

(amended 1998/03/23)

Systems Description

Type A System

(1) General

(a) Responsibility and Authority

(i) Prior to acceptance by the pilot-in-command of the Operational Flight Plan (OFP), operational control, as delegated by the Operations Manager in the company operations manual, is exercised jointly by the flight dispatcher and the pilot-in-command of a flight;
(amended 2000/12/01)

(ii) After the pilot-in-command accepts the Operational Flight Plan, the flight dispatcher and the pilot-in-command share responsibility for Flight Watch and shall share pertinent and related flight information and any proposed changes to the Operational Flight Plan;
(amended 2000/12/01)

(iii) The air operator shall specify in its company operations manual the method by which formal acceptance of the operational flight plan by the pilot-in-command and the dispatcher are recorded. If flight plans are formulated and accepted for a series of flights, the air operator must develop procedures to ensure any changes to the subsequent flight plans are approved by both the pilot-in-command and dispatcher;
(amended 2000/12/01)

(iv) The flight planning and flight watch phases of operational control can be separated into two functions requiring qualified dispatchers for each function. An air operator separating the flight planning and flight watch shall specify, in their company operations manual, the procedures required to transit from flight planning to flight watch;

(amended 2000/12/01)

(v) Once a flight has commenced, the final decision on any changes to the Operational Flight Plan shall be taken by the pilot-in-command based on considerations of safety. For the purpose of operational control systems, a flight is deemed to be “commenced” after brake release for take-off;

(amended 2000/12/01)

(vi) Limited pilot self-dispatch of flights may be permitted at those enroute stops where a lack of communications facilities prevents the co-authority dispatch of a flight. In such cases, the air operator shall develop, and submit to Transport Canada - Civil Aviation for approval, those additional procedures that are intended to compensate for the lack of flight dispatcher participation in the flight’s next operational flight plan;

(amended 2000/12/01)

(b) Centres

The Flight Dispatch Centre shall be established so as to ensure operational control throughout the air operator’s entire route structure or area of operations.

(c) Communications

(i) In-flight Communications

Timely and direct communication between the responsible flight dispatcher, if applicable, and the pilot-in-command of a flight shall be maintained during flight time over all or almost all the route structure. A communications capability similar to that required for a Type B Operational Control system may be authorized for mid-route sectors of flights and certain destinations, such as those specified in paragraph (1)(a) above, where direct communication is not practical.

(ii) On-ground Communications

A direct communications capability between the pilot-in-command and the flight dispatcher shall be provided at any station regularly served by the air operator. The equipment used shall be accessible to the pilot-in-command and may include the following:

- (A) VHF/HF Radio voice;
- (B) telephone;
- (C) data link; and
- (D) teletype.

This requirement may be waived by Transport Canada - Civil Aviation, at those stations where a lack of facilities prevents communication between the pilot-in-command and flight dispatch.

Timely communication means the ability to establish communications domestically within thirty minutes of first trying and internationally within one hour when the flight is in cruise.

Direct communication means the ability of the flight dispatcher and the pilot-in-command to communicate using the air operator's facilities, an electronic data link facility, or a facility operated by a third party according to an agreement.

(d) Flight Dispatchers On Duty

The air operator will provide sufficient dispatchers to operate their operational control system based on the air operator's workload analysis.

(2) Flight Dispatch Centre

(a) Each centre shall have a means of providing to the flight dispatcher without delay:

- (i) NOTAM and NOTAM summaries;
- (ii) all weather reports for airports used as destination or alternate airports or for emergencies;
- (iii) forecasts, area and terminal, for the area of responsibility and such wider area as are needed for proper weather trend analysis; and
- (iv) weather radar summaries, where available as part of the normal weather reporting system.

(b) The air operator shall

(amended 2000/12/01)

- (i) establish a system to inform flight dispatchers at each centre of significant changes in flight conditions and in conditions at stations significant to the company's flights.
- (ii) establish a system of documenting or recording safety related information exchanged between dispatchers, flight crews and maintenance, as stipulated in the air operator's operations manual, and
- (iii) retain the documented or recorded information for a minimum of 7 days.

(c) Each centre shall be provided with:

(amended 2000/12/01)

- (i) aeroplane operating manuals and Minimum Equipment Lists, as appropriate;
- (ii) company operations manual;
- (iii) airport runway data; and

(iv) such additional information as may be needed to enable the formulation of an operational flight plan or to exercise Flight Watch services.

(d) Each centre shall be provided with communications equipment that ensures:
(amended 2000/12/01)

(i) a means to provide a hard copy of an operational Flight Plan, or an amendment, to the pilot-in-command; and

(ii) direct ATS contact.

(3) Flight Dispatcher

(a) The air operator shall ensure that each flight dispatcher is trained and qualified in accordance with the requirements of its approved training program.

(b) Before commencing duty, a flight dispatcher shall receive a briefing on, or shall study, all pertinent weather charts, weather reports, NOTAM, operational restrictions in force, flights in the air, flights for which Operational Flight Plans (Dispatch Releases) have been issued but that have not yet commenced and for which he or she shall be responsible, and the forecast flight schedule.

(c) The responsible flight dispatcher may supervise personnel, including assistants, as part of an approved on-the-job training program, provided this supervision does not interfere with the performance of his or her duties.

(d) The flight dispatcher shall maintain a record of information generated or exchanged in relation to any flight for which that flight dispatcher has responsibility.

(4) Dispatch Release

The Dispatch Release of a flight occurs when the flight dispatcher approves the Operational Flight Plan, after which it is submitted to the pilot-in-command for acceptance. When there is disagreement between the flight dispatcher and the pilot-in-command over the dispatch of a flight, the disagreement resolution policy, where one has been specified by the air operator, or the most conservative course of action shall be followed. The dispatch release may be in the form of an Operational Flight Plan or a separate document, which includes the qualified flight dispatcher's name, personal signature or an alternate means of certifying acceptance such as an electronic signature issued in accordance with the procedure described in the air operator's company operations manual.

(amended 2007/06/30)

A means shall be provided and procedures developed to ensure that at each location where flights originate, the pilot-in-command:

(a) receives meteorological information related to the flight;

(b) obtains a hard copy of the Operational Flight Plan; and

(c) except where communication is not practical, can contact the responsible flight dispatcher prior to take-off, if necessary.

(5) Flight Watch

(a) A flight dispatcher shall maintain current information on the progress of flights for which he or she is responsible.

(b) Flight Watch, which shall continue until completion of the flight, shall be maintained on all factors and conditions that might affect the Operational Flight Plan. The pilot-in-command shall be kept fully advised of all these factors and conditions.

(c) In-flight reports shall be directed to the flight dispatcher performing flight watch

(i) after each take-off and landing;

(ii) at least once an hour on any flight longer than one hour conducted in uncontrolled airspace;

(iii) at intervals within two hours after departure and every two hours thereafter for operations conducted on other than flight plan routes within Canadian and Continental U.S.A domestic airspace. Where communications are not possible, the air operator must have an acceptable alternative to the two hour in-flight report;

(amended 2000/12/01)

(iv) when the fuel remaining at any time on the flight falls below the minimum specified on the operational flight plan; and

(v) where the pilot-in-command determines a change is necessary to the operational flight plan enroute.

(d) Reports are not required for flight operations conducted within Canadian domestic and Continental U.S.A airspace using Aircraft Situation Display System (ASDS) or another automated tracking methods integrated into the flight watch system;

(amended 2000/12/01)

(e) When using the ASDS or other automated tracking system, it shall

(amended 2000/12/01)

(i) supply identification, position, track, speed and altitude automatically refreshed at less than five minute intervals,

(ii) display the information specified in (i) above in a readable and clear manner, and

(iii) when used as a primary means for flight watch, be a redundant system which includes back-up displays, controls, power-supplies and data feeds. In addition to the redundancies built into the system, the air operator shall establish operational procedures for use during system failures and shall document the training required to operate the system in the company operations manual.

Information Note:

(i) *Direct routing or radar vectoring which does not effect the safety of the flight is considered to be within the flight plan route.*

(ii) *Reports by flights on international operations, as stipulated by ICAO standards, are required on international operations conducted outside Canadian and Continental U.S.A domestic airspace.*

(amended 2000/12/01)

Type B System

(1) General

(a) Responsibility and Authority

(i) The requirements are the same as for Type A, paragraph (1)(a); or

(ii) when departure is from an airport not routinely served by the air operator and communications do not permit the co-authority dispatch of a flight, the Operational Flight Plan (dispatch release) shall be established before the arrival of the flight. The pilot-in-command shall advise the flight dispatcher of any modifications made to the Operational Flight Plan when communications allow.

(b) Centres

The Flight Dispatch Centre shall be established so as to provide assistance to the pilots-in-command over any area for which a Type B system is approved.

(c) Communications

(i) In-flight Communications

Direct or indirect communication between the flight dispatcher and the pilot-in-command shall be maintained during flight time with as short a delay as practical considerations permit. A private agency under contract to the air operator may be approved to provide the required communications services. The use of ATS communications is permitted if the services of a private agency are not available.

(ii) On-ground Communications

The requirements are the same as for Type A, subparagraph (1)(c)(ii).

(d) Flight Dispatchers On Duty

The requirements are the same as for Type A, paragraph (1)(d).

(2) Flight Dispatch Centre

(a) Information provided to flight dispatchers - the requirements are the same as for Type A, paragraph (2)(a).

(b) Provisions of each centre - the requirements are the same as for Type A, paragraph (2)(b).

(c) Each centre shall be provided with communications equipment that ensures:

(i) direct contact with the pilot-in-command during flight when operating in the vicinity of airports regularly served by the air operator. At those stations where a lack of facilities prevent direct communications between the pilot-in-command and flight dispatch, reliable indirect contact through a ground station, by the air operator personnel, and radio relay from that station to the pilot-in-command shall be permitted;

(ii) direct communication with the flight line at each airport regularly served by the operator; and

(iii) direct ATS contact.

(3) Flight Dispatcher

The requirements are the same as for Type A, subsection (3).

(4) Dispatch Release

The requirements are the same as for Type A, subsection (4), except where differences are approved.

(5) Flight Watch

The requirements are the same as for Type A, subsection (5), with the exception of subparagraph (5)(c)(iii), which is to be observed as far as practical, taking into consideration the nature of the particular operations.

Type C System**(1) General****(a) Responsibility and Authority**

Operational control is delegated to the pilot-in-command of a flight by the Operations Manager who retains responsibility for the day-to-day conduct of flight operations.

(b) Centres

Current information on the location of the air operator's aeroplanes shall be maintained at the main base of operations or, where appropriate, at its sub-base of operations.

(c) Communications

Each aeroplane shall be equipped with serviceable and functioning communications equipment that permits the pilot-in-command to communicate with a ground radio station for the purpose of exchanging messages with the air operator. Such a ground station may be operated by the government, the air operator, or a private agency.

(d) Personnel on Duty

Refer to subsection (4) below.

(2) Dispatch Release

Flights operated under this system are self-dispatched and released by the pilot-in-command. Where an air operator chooses to use a Dispatch Release, as required under a Type B system, the flight dispatcher preparing that release shall be qualified in accordance with Type B operational control system.

(3) Flight Follower

The air operator shall ensure that each flight follower is trained in accordance with the requirements of its approved training program.

(4) Flight Watch and Flight Following

(a) Flight Following for a Type C system is the monitoring of a flight's progress, the provision of such operational information as may be required by that flight, and the notification of appropriate air operator and search-and-rescue authorities if the flight is overdue or missing.

(b) Flight Following procedures shall be described in the air operator's *Company Operations Manual*.

(c) Under a Type C system, the pilot-in-command is solely responsible for Flight Watch but shall be supported by a Flight Following System containing the following elements:

- (i) a person, qualified and knowledgeable in the air operator flight alerting procedures, on duty and able to respond to requests by the pilot-in-command for information related to the flight. Such information shall include meteorological information without analysis or interpretation;
- (ii) the progress of each flight from its commencement to its termination, including any intermediate stops, shall be monitored, which may be done by the same person as in subparagraph (4)(b)(i) above; and
- (iii) the pilot-in-command shall be responsible for passing messages concerning aeroplane landings and departures from point of origin, enroute stops, and final destination to the person described in subparagraph (4)(b)(i) above.

725.22 *Operational Flight Plan*

In accordance with the classification of its operational control system (725.20), an air operator shall adhere to one of the following types of operational flight plan (OFP):

- * 30 items OFP as listed below;
- * 18 items OFP as indicated by asterisk in the list below; or
- * informal operational flight plan, being either an ATC flight plan, a flight itinerary or other flight following information as required.

Operational Control System	Type of Operational Flight Plan
Type A	30 items OFP
Type B international	30 items OFP
Type B domestic	18 items OFP
Type C - IFR (except local) and VFR at night	18 items OFP
Type C - VFR (day) and IFR local	Informal OFP
All short range flights (less than 30 minutes)	18 items OFP
All local flights (within 25 nm from the departure aerodrome)	Informal OFP

The Minimum Required Content of an Operational Flight Plan is:

- (1)* air operator's name;
- (2)* date;
- (3)* aeroplane registration;
- (4)* aeroplane tail number (as applicable);
- (5)* aeroplane type and model (as applicable);
- (6)* flight number (as applicable);
- (7) type of flight (IFR or VFR)(not required if all the air operator's flights are the same);
- (8)* pilot-in-command's name;
- (9)* flight dispatcher's name (as applicable);
- (10)* departure aerodrome;
- (11)* destination aerodrome;
- (12)* alternate aerodrome (as applicable), including enroute alternates where required;
- (13) routing to destination by successive navigational way points and a method to obtain associated tracks for each;

- (14) routing to alternate aerodrome (as applicable);
- (15) specification of any way points enroute to satisfy special operations requirements (ETOPS, etc.);
- (16)* planned cruise altitudes to destination and alternate (as applicable);
- (17) planned cruise true air speed;
- (18) planned cruise indicated air speed, or mach number (as applicable);
- (19) winds at planned cruise altitude: these may be expressed in terms of direction/velocity or as a component/drift angle;
- (20) temperature at cruise altitude;
- (21) ground speed or wind component during cruise;
- (22)* estimated time enroute: if broken down into way point time components, a total shall be specified;
- (23) time from destination to alternate (as applicable);
- (24) distance to destination: if broken down into way point distance components, a total shall be specified;
- (25) distance from destination to alternate (as applicable);
- (26)* fuel burn enroute and from destination to alternate;
- (27)* fuel required for the type of flight plan for (as applicable):
 - (a) taxi,
 - (b) destination,
 - (c) alternate,
 - (d) holding reserve, and
 - (e) additional requirements or enroute reserve (as applicable);
- (28)* weights:
 - (a) total fuel on board,
 - (b) zero fuel weight, and
 - (c) planned maximum take-off weight;
- (29)* signature of pilot-in-command and the flight dispatcher (as applicable) or alternate means of certifying acceptance; and
- (30)* number of persons on board, crew and passengers, as amended by final load figures.

The format of the full operational flight plan shall allow the crew to record the fuel state and the progress of the flight relative to the plan. The operational flight plan may be computer generated or produced manually, working from charts and tables, by either the flight dispatcher or the flight crew. When an operational flight plan is prepared manually, an approved form displaying the requisite information and providing the necessary space to make flight following entries as the flight progresses shall be used.

The air operator shall specify, in its company operations manual, how formal acceptance of the operational flight plan by the Pilot-in-Command and, if applicable, the flight dispatcher shall be recorded.

725.25 Fuel Requirements

(1) Designated Areas and Required Fuel Reserve

(a) The designated routes or areas where the enroute fuel reserve of 5% is required, with exclusions as indicated, are:

(i) routes where flights are exclusively within or terminating within Northern Domestic Airspace; or

(ii) routes where flights are within International Airspace with the following exclusions:

(A) airspace within Continental United States excluding Alaska;

(B) airspace over the land mass of Continental Europe west of 20 degrees east longitude, including the United Kingdom, and the Republics of Finland, Greece and Ireland.

(b) Flights in the Caribbean Area

(i) Flights in the Caribbean area, when proceeding in the areas defined as A, B and C in

(ii) below, shall carry enroute fuel reserves as follows:

(A) flights into and out of Mexico City need to carry no enroute fuel reserve;

(B) flights terminating at destinations and using alternates within and out of area B need to carry no enroute fuel reserve;

(C) flights at destination of, or within areas A and C, instead of enroute fuel reserve, shall carry additional fuel above section 602.88 of the *Canadian Aviation Regulations* requirements, equivalent to five minutes of hold at 1500 feet above ground level at the intended point of landing (destination) for the aeroplane being operated; (amended 2000/12/01)

(D) flights outside areas A, B or C require enroute fuel reserve of 5%;

(E) flights originating from areas A, B or C with destinations in Canadian Southern Domestic Airspace or in the Continental United States excluding Alaska need to carry no enroute fuel reserve;

(F) flights with destinations in area A might be approved to carry no enroute fuel reserve. Approval will be done on a case-by-case basis, as per upgrading of services by Mexico.

(ii) Caribbean Areas

(A) Area A

The airspace within Mexico City UTA, Monterey UTA, and Mazatlan UTA, and Houston Oceanic CTA.

(B) Area B

The airspace within Miami Centre, Miami Oceanic CTA, New York Oceanic CTA south of 35° N and west of 70°W, San Juan Oceanic CTA and San Juan TMA.

(C) Area C

The airspace within Merida UTA, Havana CTA, Santo Domingo CTA, Port Au Prince CTA, Kingston CTA, Curacao CTA, Central American UTA, Panama CTA north of the southern boundary of the Panama ADIZ, Barranquilla UTA north of 10°N, Maiquetia UTA north of 10°N, and Piarco CTA north of 10°N and west of 59°W.

(2) Reduced Enroute Fuel Reserve - Designated Routes

To be authorized in an air operator certificate to fly routes designated as not requiring the enroute fuel reserve, the following conditions shall be met:

(a) High/Low Airway Structure

- (i) high and low level airway structure are complementary to company routings;
- (ii) ATS approved company RNAV routes are acceptable; and
- (iii) operations on high and low level air routes shall be in controlled airspace;

(b) Ground and Airborne Navigation Aids

- (i) navigation aids and airborne equipment are complementary to airway and terminal structure;
- (ii) airborne navigation equipment has redundancy;
- (iii) there shall be a maximum distance of 400 NM between navigation facilities in the high level structure;
- (iv) at least 90% of the facilities shall be DME equipped; and
- (v) FSS communication system shall be reliable and of a high quality;

(c) ATC Enroute and Terminal Radar

- (i) enroute radar capability providing 90% route coverage;
- (ii) terminal radar capability at airports with high traffic levels;
- (iii) enroute Radar equipped with SSR with Mode A1 (4096 codes), mode C and emergency coder capabilities; and
- (iv) high quality and reliable ATC communication system;

(d) Communications

ATS and FSS provide enroute NOTAM, weather reporting and forecasting service for all flight plan areas;

(e) Enroute Airports

- (i) adequate for landing of the aeroplane concerned;
- (ii) ATS controllers with language skills adequate to ensure the exchange of information with flight crews;
- (iii) 50% of enroute airports equipped with Terminal Radar, ILS, and VASIS; and
- (iv) within 60 minutes flying time with one engine inoperative.

(f) High/Low Level Weather and NOTAM Availability

- (i) complete NOTAM, forecast and actual weather information available at all points of departure for departure, enroute, destination and alternate airports;
- (ii) proven reliability in wind forecasting at all enroute altitudes;
- (iii) CAT and windshear prediction capability;
- (iv) full coverage of weather and NOTAM information through FSS enroute; and
- (v) 60% weather coverage of company routes (including area weather and enroute airports);

(g) Flight Watch/Flight Dispatch Capability

Flights must be operated under a Type A operational control system; and

(h) Air Operator Route and Airport Training

Comprehensive information provided on foreign rules, routes and airports.

(3) Reduced Enroute Fuel Reserve - for the Portion of a Flight Outside Domestic Airspace

(a) Definitions

“domestic airspace” - for the purpose of this subsection, means an area including the Canadian Southern Domestic Airspace and the areas defined in (1)(a)(ii)(A) and (B) above.

“enroute destination” - means a destination airport associated with a decision point, where the flight is to proceed if the remaining fuel on board does not meet the fuel required beyond the decision point.

“enroute alternate” - is the alternate aerodrome associated with an enroute destination.

“enroute flight release” - means a dispatch release issued during flight.

(b) To be authorized in an air operator certificate to carry an enroute fuel reserve only for that portion of a flight conducted outside domestic airspace, the following conditions shall be met:

(i) the air operator shall define a decision point in domestic airspace when entering or leaving domestic airspace and suitable enroute destination and enroute alternate for that decision point. The air operator may define other decision points outside of domestic airspace each of which shall have suitable enroute destination and enroute alternate. The decision points, enroute destinations and enroute alternates are designated in the operational flight plan. The decision points are to be located along the proposed track, no further than abeam the associated enroute destination;

(ii) enroute destinations and enroute alternates shall meet the same weather requirements as if they were actual destinations and alternates;

(iii) the enroute fuel reserve for a route segment outside of domestic airspace shall be 5% of the total fuel required to fly from a decision point, to the next decision point, then to the associated enroute destination, and then to the associated enroute alternate;

(iv) the flight is operated under a Type A operational control system;

(v) within two hours of a flight arrival at a decision point, the flight dispatcher issues an enroute flight release indicating the fuel required to the next enroute destination or to final destination, as applicable, and if a factor, the one engine inoperative and the depressurization fuel required to proceed beyond the decision point. Additional information pertinent to the safety of the flight and updates on the fuel status are also to be provided;

- (vi) the flight is not to proceed beyond a decision point unless the pilot-in-command confirms from the enroute flight release that there is fuel on board to reach the next enroute destination or final destination, as applicable, with the required fuel reserves. If upon reaching a decision point without sufficient fuel on board, the flight is to proceed to the enroute destination;
- (vii) if no enroute flight release is received at a decision point, the pilot-in-command may choose to proceed to final destination providing he is satisfied that the required fuel is on board. The pilot-in-command is to advise the flight dispatcher of his action as soon as practicable;
- (viii) the aeroplane MEL requires the aeroplane be equipped with a serviceable ACARS or with a serviceable SELCAL with two serviceable HF or two VHF transceivers when the enroute flight release is planned to be transmitted on this type of communication;
- (ix) the air operator develops procedures for reduced enroute fuel reserve operations for inclusion in the company operations manual and the flight crews and flight dispatchers receive initial and recurrent training to confirm competency for flight operations utilizing reduced enroute fuel reserves; and
- (x) the operational flight plan, flight crew log and dispatcher log identify each decision point, and at each decision point, the actual fuel requirements at the time of the issue of the enroute flight release and the actual fuel on the aeroplane.

725.29 Flight Crew Members at Controls

“Cruise portion of a flight” - means that phase of flight between reaching initial cruise altitude and the beginning of descent at destination.

Providing the procedures for handover of responsibility are detailed in the standard operating procedures manual of the air operator, relief of a flight crew member at the controls is permitted under the following conditions:

- (1) A captain, first officer, second officer or flight engineer may be relieved at any time during the flight, by a captain, first officer, second officer or flight engineer providing:
 - (a) the crew member is qualified on type in accordance with section 705.106 of the *Canadian Aviation Regulations*; and
 - (b) occupies the same cockpit position.
- (2) A captain may be relieved by a first officer providing:
 - (a) the first officer is qualified on type in accordance with section 705.106 of the *Canadian Aviation Regulations*;

(b) a first officer is designated to act as pilot-in-command or is delegated with the responsibility for the safe operation of the aeroplane and holds a valid Air Transport Pilot License; and

(c) relief occurs during the cruise phase of flight only.

(3) A first officer may be relieved by a captain providing:

(a) the captain is qualified on type in accordance with section 705.106 of the *Canadian Aviation Regulations*; and

(b) relief occurs during the cruise phase of flight only.

(4) A second officer or a flight engineer may be relieved by a captain or first officer during the cruise phase of flight only, providing the captain or first officer meets the requirements of subsection 705.107(2) of the *Canadian Aviation Regulations*.

(5) A captain or first officer may be relieved by a cruise relief pilot providing the cruise relief pilot:

(a) holds a Commercial Pilot License and is endorsed on the aeroplane type as a Cruise Relief Pilot;

(b) holds a valid Group I Instrument Rating;

(c) is qualified in accordance with section 705.106 of the *Canadian Aviation Regulations*;

(d) has successfully completed an approved ground and flight training course for a cruise relief pilot;

(e) has passed a cruise relief pilot proficiency check, consisting of the items in section 725.106 of the *Canadian Aviation Regulations*, Schedule III, conducted by an approved check pilot;

(f) has completed annual recurrent ground and synthetic training device training;

(g) has passed a cruise relief pilot line check conducted by an approved check pilot; and

(h) where the cruise relief pilot relieves the captain:

(i) the first officer is designated to act as pilot-in-command or is delegated with the responsibility for the safe operation of the aeroplane;

(ii) the first officer holds a valid Air Transport Pilot License; and

(iii) relief occurs during the cruise phase of flight only; and

(i) where the cruise relief pilot relieves the first officer:

(i) relief occurs during the cruise phase of flight only.

725.31 Crew Member Briefing

The pre-flight crew member briefing shall consist of a joint crew member briefing involving all crew members or a briefing from the pilot-in-command to the in-charge flight attendant and from the in-charge flight attendant to other cabin crew members. Where the flight involves only one flight attendant the pilot-in-command shall brief that flight attendant in accordance with subsection 725.31(2).
(amended 2006/06/30)

(1) Pre-flight Briefing - All Crew Members

The contents of the pre-flight crew member briefing that involves all crew members shall include the following as appropriate:

- (a) anticipated weather;
- (b) anticipated flying conditions;
- (c) flight time;
- (d) altitudes;
- (e) review of selected communication procedures;
- (f) review of selected emergency procedures;
- (g) review of selected safety procedures;
- (h) review of selected security procedures; and
(amended 2006/06/30)

(i) any additional information necessary for the flight including information respecting unserviceable equipment or abnormalities that may affect passengers.

(2) Pre-flight Briefing - PIC to In-charge Flight Attendant or Solo Flight Attendant
(amended 2006/06/30)

The contents of a pre-flight pilot-in-command to the in-charge flight attendant or solo flight attendant briefing shall include the following:
(amended 2006/06/30)

- (a) anticipated weather;
- (b) anticipated flying conditions;
- (c) flight time;
- (d) altitudes;
- (e) review of selected security procedures; and
(amended 2006/06/30)

(f) any additional information necessary for the flight including information respecting unserviceable equipment or abnormalities that may affect passengers.

(3) Pre-flight Briefing - In-charge to Cabin Crew

The contents of a pre-flight in-charge flight attendant to cabin crew briefing shall include the following:

- (a) review of selected communication procedures;
- (b) review of selected emergency procedures;
- (c) review of selected safety procedures;
- (d) review of selected security procedures; and
(amended 2006/06/30)
- (e) any additional information necessary for the flight including information respecting unserviceable equipment or abnormalities that may affect passengers.

Information Note:

(amended 2006/06/30)

Current events and new or recently amended procedures are recommended as subjects for review during pre-flight briefings.

725.34 Take-off Minima

The standard for take-off in IMC below the take-off weather minima specified in the *Canada Air Pilot*, in the equivalent foreign publication, or in the route and approach inventory or the instrument approach procedure referred to in the air operator certificate is:
(amended 2000/12/01)

(1) Take-off Minima - Reported Visibility - RVR 1200 feet (1/4 mile)

- (a) the company operations manual shall contain detailed guidance on how to determine departure one engine inoperative climb gradient and obstacle clearance;
- (b) an aerodrome used as take-off alternate is specified in the operational flight plan and that aerodrome is located:
 - (i) in the case of a twin-engined aeroplane, within the distance that can be flown in 60 minutes at the one-engine-inoperative cruise speed; or
 - (ii) in the case of a three- or four-engined aircraft or where an air operator is authorized in its air operator certificate to conduct ETOPS with the type of aeroplane operated and an ETOPS service check has been completed on the aircraft, within the distance that can be flown in 120 minutes at the one-engine-inoperative cruise speed;
(amended 2000/12/01)
- (c) the take-off alternate aerodrome weather minima shall meet the alternate requirements set out in the *Canada Air Pilot*;
- (d) the runway has the following equipment in accordance with the manual of *Aerodrome Standards and Recommended Practices* (TP-312):
 - (i) serviceable and functioning high intensity runway lights;
 - (ii) runway centre line lights; or

(iii) with runway centre line markings that are plainly visible to the pilot throughout the take-off run;

(e) the pilot-in-command is satisfied that the required RVR 1,200 feet (1/4 mile) visibility exists for the runway to be used before commencing take-off;

(f) the pilot-in-command and second-in-command attitude instruments (artificial horizons) on the aeroplane shall incorporate pitch attitude index lines in appropriate increments above and below the zero pitch reference line to at least 15°, and are capable of ensuring ready depiction of total aeroplane attitude. An approved failure warning system which will immediately detect essential instrument and equipment failures or malfunctions shall be installed and operative. For the purpose of reduced visibility take-offs, essential instruments are defined as attitude indicators, directional gyros and HSI's;

(g) the flight crew members shall be given training in accordance with subsection 725.124(26) of the *Canadian Aviation Regulations* as applicable.

(h) the chief pilot, or his or her designate, has certified in the pilot's training file that the pilot-in-command is competent to conduct an RVR 1,200 feet (1/4 mile) takeoff; and (amended 2000/12/01)

(i) the pilot-in-command shall have at least 100 hours of pilot-in-command experience on the aeroplane type. A pilot-in-command converting onto an aeroplane type similar to that on which he had been maintaining pilot-in-command qualifications at these limits for at least 90 days prior to conversion may be authorized these limits by the air operator on completion of required line indoctrination. Similar aeroplanes shall be considered as turbo-propeller to turbo-propeller or turbo-jet to turbo-jet.

(2) Take-off Minima - Reported Visibility - RVR 600 feet

(a) the *Company Operations Manual* shall contain detailed guidance on how to determine departure one engine inoperative climb gradient and obstacle clearance;

(b) an aerodrome used as take-off alternate is specified in the operational flight plan and that aerodrome is located:

(i) in the case of a twin-engined aeroplane, within the distance that can be flown in 60 minutes at the one-engine-inoperative cruise speed; or

(ii) in the case of a three- or four-engined aircraft or where an air operator is authorized in its air operator certificate to conduct ETOPS with the type of aeroplane operated and an ETOPS service check has been completed on the aircraft, within the distance that can be flown in 120 minutes at the one-engine-inoperative cruise speed; (amended 2000/12/01)

(c) the take-off alternate aerodrome weather minima shall meet the alternate requirements set out in the *Canada Air Pilot*;

(d) the runway has the following equipment in accordance with the manual for *Aerodrome Standards and Recommended Practices* (TP-312):

(i) serviceable and functioning high intensity runway lights, runway centre line lights and centre line markings that are plainly visible to the pilot throughout the take-off run;

- (ii) at least two transmissometers, one situated at the approach end and one at the mid-point of the runway, each reading not less than RVR 600 feet; and
 - (iii) if three transmissometers are available and the mid-point transmissometer is unserviceable, take-off is authorized provided the transmissometers at the approach end and the departure end of the runway, each is reading not less than RVR 600 feet;
- (e) the pilot-in-command is satisfied that the required RVR 600 feet visibility exists for the runway to be used before commencing take-off;
- (f) the pilot-in-command and second-in-command attitude instruments (artificial horizons) on the aeroplane shall incorporate pitch attitude index lines in appropriate increments above and below the zero pitch reference line to at least 15°, and be capable of ensuring ready depiction of total aeroplane attitude. An approved failure warning systems which will immediately detect essential instrument and equipment failures or malfunctions shall be installed and operative. For the purpose of reduced visibility take-offs, essential instruments are defined as attitude indicators, directional gyros and HSI's;
- (g) the flight crew members shall be given training in accordance with subsection 725.124(26) of the *Canadian Aviation Regulations* as applicable;
- (h) the pilot-in-command, and the second-in-command if authorized by the air operator for lower than normal take-off minima, shall be checked within the preceding 12 months or as specified in an approved advanced qualification program, in an approved synthetic training device by an approved company check pilot or a Transport Canada - Civil Aviation inspector and shall be certified in their pilot training files as competent to conduct an RVR 600 feet take-off; and
(amended 2006/06/30)
- (i) the pilot-in-command shall have at least 100 hours of pilot-in-command experience on the aeroplane type. A pilot-in-command converting onto an aeroplane type similar to that on which he had been maintaining pilot-in-command qualifications at these limits for at least 90 days prior to conversion may be authorized these limits by the air operator on completion of required line indoctrination. Similar aeroplanes shall be considered as turbo-propeller to turbo-propeller or turbo-jet to turbo-jet.

725.35 No Alternate Aerodrome - IFR Flight

For an air operator of aeroplanes to qualify to conduct a flight under IFR without designating an alternate aerodrome on the flight plan, the following standard shall be met:
(amended 2000/06/01)

(1) Area of Operations

- (a) for flights not more than six hours of scheduled flight time from the aerodrome of intended landing, the following requirements shall be met:
(amended 2006/06/30)

- (i) the take-off aerodrome shall be situated within the North American continent, the Caribbean islands or Bermuda;
(amended 2006/06/30)

(ii) the aerodromes of intended landing authorized for these "No Alternate IFR" flights shall meet the requirements of subsection (3) below; and
(amended 2006/06/30)

(iii) provided the requirements of subsections (2), (3), (4), (5) and (6) are met, the pilot-in-command may re-file "No Alternate IFR" on flights to a destination aerodrome in Canada, regardless of the location of the departure aerodrome, when within six hours of the scheduled destination aerodrome;
(amended 2006/06/30)

(b) for flights with more than six hours but not more than eight hours of scheduled flight time from the aerodrome of intended landing, the following requirements shall be met:
(amended 2006/06/30)

(i) the take-off aerodrome shall be situated within the North American continent;

(ii) the aerodrome of intended landing shall be situated within the North American continent except Mexico;

(iii) the aerodrome of intended landing shall be pre-approved by Transport Canada and listed in the air operator's company operations manual, subject to empirical data provided by the air operator to support the accuracy and efficiency of the specific aerodrome forecast (TAF) for the last three years;

(iv) the aerodrome of intended landing authorized for these no alternate IFR flights shall meet the requirements of subsection (3) below; and

(v) at a point between four and six hours from the aerodrome of intended landing, the PIC shall obtain confirmation from the air operator's operational control that the conditions at the aerodrome of intended landing still meet the provision of this standard.

(2) Weather Requirements

For at least one (1) hour before and until one (1) hour after the estimated time of arrival at the aerodrome of intended landing, there shall be, in respect of that aerodrome:
(amended 2000/06/01)

(a) no risk of fog or other restriction to visibility, including precipitation, forecast or reported, below 3 milés;

(b) no risk of thunderstorms isolated or otherwise, forecast or reported;

(c) a forecast ceiling of at least 1,000 feet above FAF altitude and a visibility of at least 3 miles (using the FAF of the destination IFR approach with the second lowest useable limits), or a ceiling of at least 1,500 feet and a visibility of at least 6 miles; and
(amended 2006/06/30)

(d) no risk of freezing precipitation forecast or reported.
(amended 2000/06/01)

(3) Aerodrome of Intended Landing - Requirements

The aerodrome of intended landing shall be equipped with:

(a) at least two (2) separate runways each of which shall be operational and suitable for a safe landing for the aeroplane type, taking into consideration the approved operational limitations;

NOTE: *The reciprocal of one runway is not acceptable as the second runway.*

(b) at least two useable and independent IFR approach aids and two independent and useable instrument approach procedures; and

(c) emergency or standby electrical power supply in support of the main electrical power supply used to operate all equipment and facilities that are essential to the safe landing of the aeroplane, whether such landing be by day or by night;

(4) Flight Dispatch Requirements

The Operation Control System shall be Type A or Type B (as applicable).

(5) Fuel Requirements

The minimum fuel required for a no alternate IFR flight plan must meet the requirements of sections 602.88 and 705.25 of the *Canadian Aviation Regulations*.

(amended 2000/06/01)

(6) Aerodrome Familiarization

Pilots shall be thoroughly familiar with all suitable diversionary aerodromes which are available (within the fuel and oil reserve carried) in respect of any flight operated on a “no alternate IFR” basis.

(7) Island Destination

(amended 2000/06/01)

In addition, where the flight is to a destination aerodrome located on an island, the following standards shall be met:

(a) Minimum Fuel on Board Requirements

The minimum fuel to be carried on board an aeroplane shall include:

(i) taxi fuel,

(ii) fuel to destination,

(iii) contingency fuel, and

(iv) additional contingency fuel or enroute fuel reserve or remote destination reserve fuel to hold for two hours at 10,000 feet at holding fuel consumption after arriving overhead the destination aerodrome, whichever is the greater.

(b) Designated Alternate Aerodrome

An alternate aerodrome shall be designated in accordance with the requirements of CAR 602.122 and shall be maintained until a point, known for the purposes of this paragraph, as the point-of-no-return (PNR), on the selected route where the fuel required to reach the alternate aerodrome and hold at 1,500 feet above the alternate aerodrome for a period of 30 minutes at holding speed under standard temperature conditions is equal to the fuel required under paragraph (a) above.

(c) Weather Requirements

The following weather requirements shall apply:

- (i) the weather minima applicable to the designated alternate aerodrome specified in accordance with paragraph (b) of this subsection meets the requirements of CAR 602.123,
- (ii) the destination aerodrome is served by a terminal forecast valid from the time of take-off from the departure aerodrome until 2 hours after the estimated time of arrival (ETA) at the destination aerodrome,
- (iii) during the period of 2 hours before ETA until 2 hours after ETA, there is, in respect of that aerodrome:
 - (A) a forecast ceiling of at least 1,000 feet above the anticipated approach Final Approach Fix (FAF) altitude and a visibility of at least 3 miles or a ceiling of at least 1,500 feet and a visibility of at least 6 miles,
 - (B) no risk of fog forecast or reported, below 3 miles,
 - (C) no other restrictions to visibility, including precipitation, forecast below 3 miles unless that restriction to visibility is forecast to be a PROB or TEMPO,
 - (D) no thunderstorms forecast unless forecast to be PROB or TEMPO, and
 - (E) no freezing precipitation forecast or reported,

NOTE: Forecast conditions normally apply for the time period of 2 hours prior to ETA until 2 hours after ETA. Reported conditions apply for that portion of the flight that the designated alternate is maintained in accordance with paragraph (b) of this subsection and less than 2 hours from the ETA at the destination aerodrome.

- (iv) hourly destination weather reports are obtained until reaching the PNR and if any forecast PROB or TEMPO condition is reported in two consecutive hourly reports, an updated destination forecast is obtained prior to proceeding beyond the PNR.

(d) Flight Dispatch Requirements

An efficient two-way point-to-point and ground-to-air communication system shall be established between dispatch agencies along the route and the aeroplane.

(e) Aerodrome Familiarization

Pilots shall be thoroughly familiar with the pertinent information for all suitable designated alternate aerodromes which are available during the flight within the fuel and oil reserve carried.

725.37 Routes in Uncontrolled Airspace

For an air operator to establish routes in uncontrolled airspace the following standards shall be met:

(1) A minimum obstruction clearance altitude (MOCA) shall be established for each route segment by the use of aeronautical charts and the *Canada Flight Supplement* for updating of significant obstructions as follows:

- (a) for flight under IFR a minimum altitude of 2000 feet above the highest obstacle located within a horizontal distance of 10 miles from the centre line of route;
- (b) for flight at night in VFR conditions a minimum altitude of 1000 feet above the highest obstacle located within 3 miles from the centre line of the route;

(2) For each route segment a minimum enroute altitude (MEA) shall be established which meets or exceeds the minimum obstruction clearance altitude and assures navigational signal coverage. For line of sight navigation aid reception distance for ground installed aids, the minimum reception altitude may be calculated by calculating the square root of an altitude above the navigation aid and multiplying the result by 1.25 (Sq. root 3000 ft. is 54.7 x 1.25 = 68 miles). The MEA will be established to the nearest higher 100 foot increment.

(3) Each route shall include:

- (a) The FROM/TO route segment;
- (b) track;
- (c) MOCA;
- (d) MEA;
- (e) distance between fixes or waypoints; and
- (f) navigation aids.

(4) The air operator shall maintain a record of its company routes in a form and format similar to the catalogue of approved routes.

Provided the above procedures are followed, an air operator's pilot may use routes that are not yet contained in the record of company routes.

(5) Prior to initial use of other than a publicly available navigation aid, permission of the owner/operator shall be obtained and retained in company records. No VFR at night or IFR flights shall commence unless the navigation aids upon which the route is predicated are in satisfactory operating condition or the flight is conducted using an approved long range navigation system.

When company routes are predicated on other than a publicly available navigation aid and arrangements have not been made with the owner/operator to advise when the navigation aid is out of service, instructions to pilots shall be included on how, and whom to contact, to confirm that the navigation aid is in service.

(6) The air operator's company operations manual shall be amended to outline the above procedures and information for pilot guidance.

(7) The flight visibility shall not be less than 3 miles for flights in VFR at night.

725.39 Weight and Balance Control

The weight and balance system required by section 705.39 of the *Canadian Aviation Regulations* shall specify for each flight how the air operator will establish and be responsible for the accuracy of:

(1) aeroplane basic empty weight and centre of gravity determined in accordance with the *Airplane Flight Manual*;

(2) aeroplane operational empty weight and centre of gravity. The aeroplane operational empty weight is the actual weight of the aeroplane before loading for dispatch consisting of the aeroplane basic empty weight and may include removable equipment, flight crew members (including baggage), crew members (including baggage and supplies) water, toilet fluids and chemicals, oil, unusable fuel and emergency equipment and shall be defined by the air operator;

(3) weight of passengers, carry-on baggage and checked baggage, determined either by actual weight, by using approved standard weights or by using approved survey weights, and the actual weight of cargo;

(4) weight of the fuel load determined by using either the actual specific gravity or a standard specific gravity;

(5) aeroplane loading including, but not limited to, compartment weight and bulk cargo limits, floor loading limits, cargo restraint and unit load device/pallet loading considering weight and centre of gravity limits;

(6) aeroplane zero fuel weight;

(7) location of the centre of gravity to include the longitudinal position and where required, lateral and vertical positions;

(8) preparation and disposition of all required documentation whether by the air operator or other qualified personnel authorized by the air operator; and

(9) the training, both initial and recurrent, of all air operator personnel and other qualified personnel authorized by the air operator with duties and responsibilities in this system. The training shall be in the appropriate parts of the company operations manual.

The weight and balance computation may be incorporated in the operational flight plan or be a separate form.

725.40 Passenger and Cabin Safety Procedures

(1) Safe Movement of Passengers to and from the Aeroplane (refers to paragraph 705.40(1)(a) of the *Canadian Aviation Regulations*)

The procedures for the safe movement of passengers to and from the aeroplane shall include:

- (a) wherever possible, aeroplanes are parked in a location that avoids passenger exposure to hazardous conditions;
- (b) announcements to embarking/disembarking passengers as warranted to alert them to hazardous conditions or dangers that may be encountered during embarkment/disembarkment and/or enroute to or from the airside exit/entrance points, and advising them to follow any directions provided outside the aeroplane;
- (c) adequate guidance, and where necessary an escort, provided to passengers so as to ensure that their movements while airside are properly controlled. The responsibility for this shall be clearly defined and the controls shall ensure:
 - (i) passengers are directed along the correct and safe route between the aeroplane and the airside entrance/exit point, and a sufficient number of personnel are assigned to exercise surveillance and control of passengers and to give prompt attention to stragglers where necessary;
 - (ii) an escort is assigned to control passenger movements when the route to or from the aeroplane is congested by other aircraft or vehicles or when required by the Air Carrier Security Measures; and
 - (iii) passengers are not exposed to hazards from aircraft operations, fuelling equipment, exposure to jet blasts, engines, rotors or propellers, or to the hazards posed by lighting conditions, obstacles positioned along the route or unsafe surface or stairway conditions;
- (d) smoking restrictions are enforced;
- (e) personal headsets that are used with personal entertainment systems that decrease awareness of other traffic or limit reception of audible direction or warning signals, are not worn;
(amended 1999/09/01)
- (f) clearly assigning the responsibility for the opening/closing and the locking/unlocking of terminal building doors, to enable embarking/disembarking passengers to access the apron or terminal. Where this responsibility is assigned to persons other than the air operator's personnel or those contracted by the air operator, the crew members are so advised;
- (g) where conditions so warrant, the embarking or disembarking activity is postponed until a safe walking zone is prepared; and
- (h) unsatisfactory or hazardous conditions are reported to the responsible authority.

The procedures shall not preclude the safe embarkment and disembarkment of all passengers.

The procedures shall be incorporated in training programs and training will be provided to crew members, ground handling and passenger agent staff (including contract personnel) involved with the transfer of passengers between the terminal building and the aeroplane.

The training will be adequate to ensure that personnel are fully aware of their responsibilities, are able to perform their assigned duties for the safety of airside passengers and know to whom the air operator personnel report in the application of their responsibilities. Where there is an overlap in the duties/responsibilities assigned to personnel, the training will ensure that the trainees know the relationship of their duties/responsibilities to those of the other personnel involved.

(2) Fuelling with Passengers on Board (refers to subsection 705.40(3) of the *Canadian Aviation Regulations*)

Aeroplanes may be fuelled with passengers embarking, disembarking, or on board under the following conditions:

(a) in order to ensure that crew members receive prompt notification of a situation threatening safety such as major fuel spill or a fire, two way communication is maintained between the ground crew supervising the fuelling and the qualified personnel on board the aeroplane so that the aeroplane can be deplaned or evacuated as necessary.

(b) a means of communication among the qualified personnel on board the aeroplane, ground/maintenance crews and fuelling agencies is determined and established and the procedures are provided to the appropriate personnel.

(c) the aeroplane engines are not running unless the aircraft incorporates a propeller brake and the brake is set. The *Aircraft Flight Manual* must refer to the propeller brake/engine as an auxiliary power unit (APU).

(d) During the fuelling process:

(i) aeroplane ground power generators or other electrical ground power supplies are not being connected or disconnected;

(ii) combustion heaters installed on the aeroplane (e.g. wing and tail surface heaters, integral cabin heaters) are not operated;

(iii) other combustion heaters used in the vicinity of the aeroplane are manufactured to CSA or ULC standards and approved in accordance with the Fire Commissioner of Canada for use in hazardous atmosphere;

(iv) known high energy equipment such as High Frequency (HF) radios are not operated, unless in accordance with the aeroplane manufacturer's approved flight manual where the manual contains procedures for the use of this equipment during fuelling;

- (v) weather-mapping radar equipment in the aeroplane is not operated unless in accordance with the manufacturer's approved aeroplane flight manual where the manual contains procedures for use during fuelling;
 - (vi) aeroplane batteries are not being removed or installed;
 - (vii) external battery chargers are not being connected, operated or disconnected;
 - (viii) aeroplane-borne auxiliary power units which have an efflux discharging into the zone are not started after filler caps are removed or fuelling connections are made;
 - (ix) if an auxiliary power unit (APU) is stopped for any reason during fuelling it shall not be restarted until the flow of fuel has ceased and there is no risk of igniting fuel vapours, however, the APU may be operated in accordance with the manufacturer's approved aeroplane flight manual if the manual contains procedures for starting the APU during fuelling;
 - (x) electric tools or similar tools likely to produce sparks or arcs are not being used; and
 - (xi) photographic equipment is not used within 10 ft. (3m) of the fuelling equipment or the fill or vent points of the aeroplane fuel systems;
- (e) fuelling is immediately suspended when there are lightning discharges within 8 km of the aerodrome;
- (f) the aeroplane is fuelled in accordance with manufacturer's procedures for that type of aeroplane;
- (g) the aeroplane emergency lighting system is armed or on;
- (h) "No Smoking" signs on board the aeroplane are illuminated, as applicable;
- (i) procedures are established to ensure that passengers do not smoke, operate portable electronic devices or otherwise produce sources of ignition;
- (j) a minimum of two exits are designated evacuation exits during fuelling; one of which must be the entry doors through which the passengers embarked;
- (k) the designated evacuation exits during fuelling are identified by aeroplane type and published in the company operations manual, and are clear and available for immediate use by passengers and crew members should an evacuation be required;
- (l) the air operator has procedures in place to ensure that there is a ready escape route from each designated evacuation exit during fuelling, and that designated evacuation exits which are equipped with slides have the slides armed or a crew member is in the immediate vicinity to arm the slides if required;

- (m) a means of evacuation such as a deployed integral stair, a loading stair or stand, a loading bridge or a passenger transfer vehicle (PTV) is in place at the aeroplane door used for the embarking and disembarking of passengers and is free of obstruction and available for immediate use by the aeroplane occupants if necessary;
- (n) for aeroplanes requiring a minimum cabin crew of one, a qualified person trained in the operation and use of emergency exits and in emergency evacuation procedures who is ready to initiate and direct an evacuation is at or near the passenger entry door;
- (o) for aeroplanes requiring a minimum cabin crew of more than one, at least the minimum number of flight attendants for the aeroplane type or the number of passengers on board, whichever is greater, are on board and positioned at or near each designated evacuation exit during fuelling. Flight attendants may be replaced by an equivalent number of other staff provided that they have successfully completed the air operator's approved emergency evacuation procedures training for that aeroplane type;
- (p) flight crew members inform the in-charge flight attendant when they are leaving the aeroplane;
- (q) where desirable for climatic reasons, and provided a flight crew member is on board or a means of communication is available to the flight attendants, an aeroplane embarking door, that is inward opening or that can be fully opened to the exterior without repositioning of loading stairs or stand, may be closed and latched if necessary to keep it closed, but may not be locked; and
- (r) procedures are established to ensure that flight attendants or qualified persons replacing flight attendants in accordance with paragraph (o) are made aware of when fuelling will take place.

(3) Use of Portable Electronic Devices (refers to paragraph 705.40(4)(b) of the *Canadian Aviation Regulations*)

(amended 1998/03/23)

(a) The prohibited devices, the permitted devices without restrictions and the permitted devices with restrictions are defined as follows, and are to be used in accordance with the stated requirements as applicable:

(i) Prohibited devices:

Any transmitting device that intentionally radiates radio frequency signals;

(ii) Permitted devices without restrictions:

- (A) hearing aids,
- (B) heart pacemakers,
- (C) electronic watches, and
- (D) properly certificated air operator installed equipment;

(iii) Permitted devices with restrictions:

(A) personal life support systems may be operated during all phases of flight, provided that the device does not cause interference with the aircraft's systems or equipment;

(B) portable two-way radio communication devices may be used subject to all of the following conditions and restrictions being met:

(I) use is prohibited at all times when the aircraft engines are running, excluding the auxiliary power unit,

(II) when the pre-flight safety briefing begins prior to engine start, use is terminated during the delivery of the pre-flight safety briefing and demonstration, and

(III) the company operations manual contains procedures to ensure these devices are turned off and properly stowed during the delivery of the pre-flight safety briefing and demonstration and while the aircraft engines are running;

(C) other portable electronic devices may be used, except during take-off, climb, approach and landing;

(b) Passengers shall be informed of the air operator's policy pertaining to the use of portable electronic devices and those devices that are prohibited from use during the delivery of the pre-flight safety briefing and demonstration;

(c) When interference with the aircraft's systems or equipment is suspected from use of a portable electronic device, crew members shall:

(i) confirm passenger use of portable electronic device(s),

(ii) instruct passenger(s) to terminate the use of portable electronic device(s),

(iii) prohibit the use of suspected portable electronic device(s), and

(iv) recheck the aircraft's systems and equipment.

(d) The pilot-in-command shall report incidents of portable electronic device interference and include the following information in the report:

(i) Flight Information - aircraft type, registration, date and UTC time of incident, aircraft location (VOR bearing/DIST/LAT/LONG), altitude, weather conditions, pilot name and telephone number,

(ii) Description of Interference - description of effects on cockpit indicators, audio or systems, including radio frequency, identification, duration, severity and other pertinent information,

(iii) Action Taken by Pilot/Crew to Identify Cause or Source of Interference,

- (iv) Identification of Portable Electronic device - description of device, brand name, model, serial number, mode of operation (i.e. FM radio), device location (seat location), and regulatory approval number (FCC/other),
 - (v) Identification of User - name and telephone number of passenger operating the device, and
 - (vi) Additional Information - as determined pertinent by the crew;
- (e) Reports of portable electronic device interference shall be submitted to the Director, Safety Services, Transport Canada, Transport Canada Building, Place de Ville, Ottawa, Ontario K1A 0N8.

725.41 *Flight Attendant Stations*

(1) Standard for Approval of Flight Attendant Stations

- (a) The flight attendant stations for flight attendants required by section 705.104 of the *Canadian Aviation Regulations* shall be evenly distributed throughout the cabin and shall:
- (i) be located in the passenger cabin near floor level emergency exits or, because of exit type and distribution or the access to the communication system, at some other approved exit;
 - (ii) be positioned so that the seat will not interfere with the use of a passageway or exit when the seat is not in use;
 - (iii) provide access to the communication system when the flight attendant is seated, except when the communication system and flight attendant seat are installed in accordance with the original type certification basis of the aeroplane; and
 - (iv) be located to minimize the probability of injury to the occupant from items dislodged in a galley or from a stowage compartment or serving cart. Secondary latching mechanisms must be used to prevent items from being dislodged.
- (b) Each aeroplane shall, for each flight attendant required by section 705.104 of the *Canadian Aviation Regulations*, be equipped with either a forward or aft facing seat designed to at least the inertial load factors established under the original type certification basis of the aeroplane. The seat shall provide an energy absorbing rest to support the arms, shoulders, head, and spine.
- (c) There shall be a means to secure each combined safety belt and shoulder harness when not in use so as to prevent interference with rapid egress in an emergency.
- (d) Flight attendant stations shall be approved for use in order of priority based on the minimum crew required for that aeroplane up to the maximum number of flight attendants carried.

(e) Where the passenger entry door is an emergency exit, the flight attendant seat located nearest to it shall be the primary station. All other exits shall be prioritized in the following manner:

- (i) no two opposite and no two adjacent floor level exits shall be unassigned;
- (ii) flight attendant seats located adjacent to communication panels, evacuation horns, or the emergency light switch shall have a higher priority than seats that are not so located; and
- (iii) the lowest priority is an aisle passenger seat located at a Type III window exit.

(f) Notwithstanding (e), the approval of the flight attendant stations shall consider the emergency procedures for the aeroplane type/model for the operator as well as conditions imposed during the original type certification of the aeroplane.

(2) Standard for occupancy of Flight Attendant Seats

The air operator may permit persons other than assigned flight attendants to occupy an available flight attendant seat under the following conditions:

(a) A crew member employed by the air operator, but not assigned as a member of the operating crew for the flight in question, may occupy an available flight attendant seat when:

- (i) there are no passenger seats available;
- (ii) the person is wearing the company uniform, or is appropriately identified and is briefed on:
 - (A) the operation and use of the flight attendant seat and restraint system;
 - (B) the location and use of the oxygen system at the flight attendant seat where applicable;
 - (C) the location and use of life preserver; and
 - (D) the person's responsibilities and actions during an emergency.

(b) A Cabin Safety Inspector carrying out an in-flight cabin inspection, may occupy an available flight attendant seat only when:

- (i) an inaccurate load forecast for a multi-sector flight results in the displacement of the Inspector by a revenue passenger or a deadheading crew member;
- (ii) in extenuating circumstances when the completion of the in-flight cabin inspection is mandatory and alternate seating is not available; or

(iii) The Inspector has been briefed on:

- (A) the operation and use of the flight attendant seat and restraint system;
- (B) the location and use of the oxygen system at the flight attendant seat where applicable;
- (C) the location and use of life preserver; and
- (D) the person's responsibilities and actions during an emergency.

(c) Any other person may occupy a flight attendant seat if the following conditions prevail:

- (i) a declared emergency exists;
- (ii) the person is an able-bodied person displaced from a passenger seat to a flight attendant seat to enhance evacuation management; and
- (iii) the person is briefed by a qualified crew member regarding his/her responsibilities and actions.

725.42 Carry-on Baggage

The objective of the carry-on baggage control program shall be to prevent the boarding of carry-on baggage which will exceed the weight, size, shape, and total volume limitations of the approved stowage areas of the aeroplane. The approved carry-on baggage control program shall:

- (1) identify who is responsible for the acceptance or refusal of carry-on baggage;
- (2) identify and publicize the criteria that will be used for the acceptance or refusal of carry-on baggage;
- (3) identify the procedures that will be used in acceptance or refusal of carry-on baggage;
- (4) identify the locations and under what conditions the screening will take place;
- (5) include the training for all involved employees and agents;
- (6) be published in the company operations manual and flight attendant manual as well as any other appropriate location; and
- (7) contain at least the following elements:
 - (a) at least one carry-on baggage control point shall be established;
 - (b) the control point shall be located outside the aeroplane;
 - (c) each article of carry-on baggage shall be assessed by an employee of the air operator prior to reaching the aeroplane;
 - (d) the air operator shall establish the maximum dimensions of articles or combination of articles that can be safely stowed on board the flight;

- (e) the air operator shall establish the maximum number of articles or combinations of articles that can be carried on board an aeroplane per passenger for the flight. This allowance shall include duty free articles;
- (f) the procedures and locations for stowage of crew baggage;
- (g) the means by which passengers will be informed of specific carry-on baggage requirements or limitations for the flight;
- (h) the procedures for acceptance of stand-by passengers carry-on baggage and carry-on baggage from connecting flights of differing aeroplane sizes;
- (i) the procedures for handling unusual or fragile items including extremely delicate scientific instruments, human organs for transplant, articles which exceed the maximum dimensions, passenger mobility aids, or medical equipment; and
- (j) the procedures for the proper stowage of carry-on baggage on board the aeroplane.

725.43 Briefing of Passengers

(1) Standard Safety Briefing

The standard safety briefing shall consist of an oral briefing provided by a crew member or by audio or audio-visual means in both official languages which includes the following information as applicable to the aeroplane, equipment, and operation:

(a) Prior to Take-off

- (i) when, where, why and how carry-on baggage is required to be stowed;
- (ii) the fastening, unfastening, adjusting and general use of safety belts or safety harnesses;
- (iii) when seat backs must be secured in the upright position and chair tables must be stowed;
- (iv) the location of emergency exits;
(amended 1999/09/01)
- (v) the Floor Proximity Emergency Escape Path lighting system;
- (vi) the location, purpose of, and advisability of reading the safety features card;
- (vii) the regulatory requirement to obey crew instructions regarding safety belts and no smoking or Fasten Seat Belt signs and No Smoking signs and the location of these signs;
- (viii) where flight attendants are not required, the location of any emergency equipment the passenger may have a need for in an emergency situation such as the ELT, fire extinguisher, survival equipment (including the means to access if in a locked compartment), first aid kits, and life rafts;
- (ix) the use of passenger operated portable electronic devices;

(x) the location, and operation of the fixed passenger oxygen system, including the location and presentation of the masks; the actions to be performed by the passenger in order to obtain the mask, activate the flow of oxygen and correctly don and secure the mask. This will include a demonstration of their location, method of donning including the use of elastic band, and operation, and instruction on the priority for persons assisting others. This briefing may be completed after take-off but prior to reaching 25,000 feet;

(xi) the location, and use of life preservers, including how to remove from stowage/packaging and a demonstration of their location, method of donning and inflation, and when to inflate life preservers. This briefing may be completed after take-off prior to the over water portion of the flight; and

(xii) the fact that passengers may draw to the attention of a cabin crew member any concerns relating to safety.

(amended 2000/12/01)

(b) After Take-off

(i) that smoking is prohibited; and

(ii) the advisability of using safety-belts or safety harnesses during flight;

(c) In-flight when the Fasten Seat Belt Sign has been Turned on for Reasons of Turbulence

(i) when the use of seat belts is required; and

(ii) when the level of turbulence is anticipated to exceed light, the requirement to stow carry-on baggage;

(amended 1998/03/23)

(d) Prior to Landing

(i) carry on baggage stowage requirements;

(ii) correct seat back and chair table positioning;

(iii) on flights scheduled for four hours duration or more, the location of emergency exits; and

(iv) the seat belt requirement;

(e) prior to passenger disembarkment, the no smoking requirement, the safest direction and most hazard-free route for passenger movement away from the aeroplane following disembarkment; and any dangers associated with the aeroplane type such as pitot tube locations, propellers, or engine intakes.

The safety message of the briefing may not be diluted by the inclusion of any service information or advertising that would affect the integrity of the safety briefing.

(2) Individual Safety Briefing

The individual safety briefing shall include:

- (a) any information contained in the standard safety briefing and the safety features card that the passenger would not be able to receive during the normal conduct of that safety briefing; and
- (b) additional information applicable to the needs of that person as follows:
 - (i) the most appropriate brace position for that passenger in consideration of his/her condition, injury, stature, and/or seat orientation and pitch;
 - (ii) the location to place any service animal that accompanies the passenger;
 - (iii) for a mobility restricted passenger who needs assistance in moving expeditiously to an exit during an emergency:
 - (A) a determination of what assistance the person would require to get to an exit;
 - (B) the route to the most appropriate exit;
 - (C) the most appropriate time to begin moving to that exit; and
 - (D) a determination of the most appropriate manner of assisting the passenger;
 - (iv) for a visually impaired person:
 - (A) detailed information of and facilitating a tactile familiarization with the equipment that he/she may be required to use;
 - (B) advising the person where to stow his/her cane if applicable;
 - (C) the number of rows of seats between his/her seat and his/her closest exit and alternate exit;
 - (D) an explanation of the features of the exits; and
 - (E) if requested, a tactile familiarization of the exit;
 - (v) for a comprehension restricted person: while using the safety features card, pointing out the emergency exits and alternate exits to use, and any equipment that he/she may be required to use;
 - (vi) for persons with a hearing impairment:
 - (A) while using the safety features card, point out the emergency exits and alternate exits to use, and any other equipment that the person may be required to use;
 - (B) communicating detail information by pointing, face-to-face communication permitting speech reading, pen and paper, through an interpreter or through their attendant;

(vii) for a passenger who is responsible for another person on board, information pertinent to the needs of the other person as applicable:

(A) In the case of an infant

- (I) seat belt instructions;
- (II) method of holding infant for take-off and landing;
- (III) instructions pertaining to the use of a child restraint system;
- (IV) oxygen mask donning instructions;
- (V) recommended brace position; and
- (VI) location and use of life preservers, as required.

(B) In the case of any other person

- (I) oxygen mask donning instructions;
- (II) instructions pertaining to the use of a child restraint system; and
- (III) evacuation responsibilities;

(viii) for an unaccompanied minor, instructions to pay close attention to the normal safety briefing and to follow all instructions.

A passenger that has been provided with an individual safety briefing need not be re-briefed following a change in crew if the crew member that provided the individual safety briefing has advised a member of the new crew of the contents of that briefing including any information respecting the special needs of that passenger.

A passenger may decline an individual safety briefing.

(3) Passenger Preparation for Emergency Landing

The emergency briefing provided in the event of an emergency where time and circumstances permit shall consist of instructions pertaining to:

- (a) safety belts/safety harnesses;
- (b) seat backs and chair tables;
- (c) carry-on baggage;
- (d) safety features cards;
- (e) brace position (how to brace, when to assume position, how long to remain);
- (f) if applicable, life preservers;
- (g) location of exits; and
- (h) if applicable, evacuation procedures for an occupant of a child restraint system.

(amended 1999/09/01)

**725.44 *Safety Features Card and Supplemental
Briefing Card***

(amended 2009/05/28)

(1) The safety features card shall contain the following information as applicable to the aeroplane and equipment carried:

(a) general safety information including:

- (i) smoking is prohibited on board the aeroplane;
- (ii) each type of safety belt or safety harness installed for passenger use, including when to use, and how to fasten, tighten and release;
- (iii) when and where carry on baggage must be stowed for take-off and landing; and any other related requirements and restrictions pertinent to that particular aeroplane; and
- (iv) correct positioning of seat backs and chair tables for take-off and landing;

(b) emergency procedures and equipment including:

(i) fixed passenger oxygen system showing:

- (A) mask location and presentation; the actions to be performed by the seated passenger in order to obtain the mask, activate the flow of oxygen and correctly don and secure the mask; and
- (B) priority for persons assisting others with oxygen;

(ii) for aeroplanes where flight attendants are not required:

- (A) location of first aid kits;
- (B) location of fire extinguishers that would be accessible to the passengers;
- (C) location of Emergency Locator Transmitters; and
- (D) location of survival equipment, and if the stowage compartment is locked, the means of access or location of the key;
- (iii) passenger brace position for impact, as appropriate for each type of seat and restraint system installed for passenger use; including the brace position for an adult holding an infant;
- (iv) the location, operation and method of using each emergency exit type on the aeroplane, including identification of those emergency exits known to be rendered unusable in a ditching or because of the aeroplane configuration such as a combi configuration;
- (v) the safest direction and most hazard-free escape route for passenger movement away from the aeroplane following evacuation;
- (vi) the attitude of the aeroplane while floating;

- (vii) location of life preservers and correct procedures for removal from stowage/packaging; donning and use of the life jacket for adult, child and infant users including when to inflate;
 - (viii) location and use of life rafts;
 - (ix) location, removal and use of flotation devices; and
 - (x) the form, function, colour and location of any Floor Proximity Emergency Escape Path lighting system that is installed.
- (c) The safety features card shall bear the name of the air operator and the aeroplane type and shall contain only safety information.
- (d) The safety information provided by the card shall:
- (i) be accurate for the aeroplane type and configuration in which it is carried and in respect of the equipment carried;
 - (ii) be presented with clear separation between each instructional procedure. All actions required to complete a multi-action procedure to be presented in correct sequence and the sequence of actions to be clearly identified; and
 - (iii) be depicted in a clear and distinct manner.

(2) The supplemental briefing cards shall contain at least the following information:

(amended 2009/05/28)

- (a) a statement that the crew member will give the passenger an individual briefing before departure;
- (b) how to fasten, adjust and unfasten the safety belt;
- (c) a recommendation to keep the safety belt fastened at all times;
- (d) a brief description of how to assume the brace position;
- (e) an instruction to become familiar with the location of emergency exits, and to receive information on flotation equipment and oxygen masks carried on the aircraft; and
- (f) an instruction to ensure that crew members are aware of what assistance the passenger may need in the event of an emergency

725.48 Instrument Approach Procedures

(amended 2006/12/01)

Stabilized Constant-Descent-Angle (SCDA) Non-Precision Approach

In order to conduct a stabilized constant-descent-angle (SCDA) non-precision approach, the following requirements shall be met:

- (a) the air operator's flight crew training and qualifications program includes SCDA non-precision approach in accordance with section 705.124 of the *Canadian Aviation Regulations*;
- (b) the air operator's standard operating procedures incorporate SCDA non-precision approach in accordance with section 705.138 of the *Canadian Aviation Regulations*, and the procedures include a specified amount to be added to the MDA to compensate for the additional height loss during the missed approach initiation during approaches where

- (i) there is a failure of an aircraft system,
 - (ii) the aircraft is above normal maximum landing weight,
 - (iii) the aircraft landing weight is limited by aborted landing climb performance, or
 - (iv) height loss could be expected to be larger than normal;
- (c) the final approach course does not differ from the runway centreline direction by more than 15 degrees; and
- (d) the descent angle from the planned final approach fix (FAF) crossing altitude to the target touchdown point on the runway is not less than 2.9 degrees and not more than 3.5 degrees.

DIVISION IV - AEROPLANE PERFORMANCE OPERATING LIMITATIONS

725.54 Exceptions

The standards for operating an aeroplane without fully complying with Sections 705.55 through 705.61 of the *Canadian Aviation Regulations* are as follows:

(1) General Requirements

(a) Operations Using Other than Approved Performance Data - Contaminated Runway

The standard for operating an aircraft to or from a contaminated runway, where the operator elects to use performance data from a source other than the *Aeroplane Flight Manual* is as follows:

- (i) The aeroplane shall be operated in accordance with a contaminated runway operations supplement to the *Flight Manual* that has been prepared or approved by the aircraft manufacturer;
- (ii) Take-off weight limitations may be based on an engine-out condition using a 15-foot screen height, provided the area to be used for first segment climb contains no obstacles taller than 15 feet;
- (iii) Where the manufacturer permits, stopping distance calculations may include credit for reverse thrust on the operative engine;
- (iv) Operation at reduced thrust settings shall not be permitted, and V_{mc} shall be based on full-rated thrust;
- (v) The *Company Operations Manual* shall set out procedures for operations using contaminated runways; and
- (vi) Pilot and, where applicable, dispatcher ground training shall address contaminated runway operations.

(b) Operations Using Other than Approved Performance Data - Reciprocating Engined Aeroplanes in Cargo-only Operations

The standard for operating a reciprocating engined aeroplane during cargo-only operations from or to unprepared surfaces, when such operations are not specifically addressed in the *Aeroplane Flight Manual* is as follows:

The air operator's Company Operations Manual shall set out the program for operations involving unprepared surfaces. The program shall include:

- (i) pilot-in-command training, checking and experience requirements:
 - (A) at least 100 hours on type;
 - (B) completed a course of ground and flight training covering topics such as takeoff and landing surface characteristics, obstacle assessment and interpretation of pertinent aeroplane data;
 - (C) completed at least 25 hours of line indoctrination involving unprepared surface operations; and
 - (D) passed a line check covering unprepared surface operations;
- (ii) procedures for company operational approval for unprepared surface operations; and
- (iii) procedures for assessing and operating from/to unprepared surfaces and unfamiliar approach and departure routes.

(2) Take-off Weight Limitations - Accelerate-Stop Distance

The standard for operating a reciprocating engine aeroplane where the Accelerate-Stop Distance Required exceeds the Accelerate-Stop Distance Available requires the air operator to prevent more than 9 passenger seats from being occupied.

(3) Net Take-off Flight Path - Visual Obstacle Avoidance

The standard for determining Net Take-off Flight Path for a reciprocating engine aeroplane when visual obstacle avoidance is possible is as follows:

(a) Obstacle Assessment

- (i) The air operator shall obtain the best available data concerning obstacles in the proposed take-off path. Transient obstacles (such as construction equipment or moored watercraft, etc.) shall be considered when they are estimated to lie within 300 feet of the centreline of the proposed takeoff path; and
- (ii) Where the precise height, bearing and distance of an object is not known (such as objects depicted on a topographical map), the air operator shall use a reasonable estimate for performance calculations. Calculations shall clearly indicate where estimated information is used;

(b) Departure Planning

- (i) The Operations Manager or his/her delegate shall establish a company engine-out departure plan using procedures set out in the *Company Operations Manual*, and including at least the following:
 - (A) obstacle assessment;
 - (B) aeroplane performance, including turn radii; and

(C) visual reference points to be used during the departure route;

NOTE: *In all cases the air operator shall retain the departure plan for audit purposes.*

(ii) Prior to commencing a take-off, the pilot-in-command shall, in consideration of the current winds, density altitude and aeroplane weight, satisfy himself or herself that the departure plan to be followed in the event of an engine failure on take-off avoids all obstacles in the departure path by either 35 feet vertically or 300 feet horizontally.

DIVISION V - AEROPLANE EQUIPMENT REQUIREMENTS

725.81 Cargo and Baggage Compartment Fire Protection (amended 2003/12/01)

Interpretation

(1) In this section,

“Class D cargo or baggage compartment” - means a Class D cargo or baggage compartment as that expression is defined in paragraph 525.857(d) of the *Airworthiness Manual* which was in effect on January 1, 1987; (*soute à fret ou à bagages de classe D*)

Information Note

Paragraph 525.857(d) of the Airworthiness Manual which was in effect on January 1, 1987 is reproduced below for the sake of convenience:

“(d) Class D.

A Class D cargo or baggage compartment is one in which:

(1) A fire occurring in it will be completely confined without endangering the safety of the airplane or the occupants;

(2) There are means to exclude hazardous quantities of smoke, flames, or other noxious gases, from any compartment occupied by the crew or passengers;

(3) Ventilation and drafts are controlled within each compartment so that any fire likely to occur in the compartment will not progress beyond safe limits;

(4) [Reserved]

(5) Consideration is given to the effect of heat within the compartment on adjacent critical parts of the airplane.

[(6) The compartment volume does not exceed 1,000 cubic feet.] For compartments of 500 cu. ft. or less, an airflow of 1500 cu. ft. per hour is acceptable.”

“liner” - includes any design feature, such as joints and fasteners, affecting the capability of the liner of a cargo or baggage compartment to safely contain a fire. (*revêtement intérieur*)

General

(2) Each Class D cargo or baggage compartment shall meet:

(a) the requirements applicable to Class C compartments set out in paragraph 525.857(c) and in section 525.858 of the standards, or

(b) for an all-cargo aeroplane, the requirements applicable to Class C compartments set out in paragraph 525.857(c) and in section 525.858 of the standards, or the requirements applicable to Class E compartments set out in paragraph 525.857(e) and in section 525.858 of the standards.

Liner

(3) Each Class C cargo or baggage compartment referred to in section 525.857 of the standards or each Class D cargo or baggage compartment, having a volume greater than 5.66 m³ (200 ft³) shall be equipped with ceiling and sidewall liner panels that are constructed of:

(a) materials which meet the test requirements set out in Chapter 525, Appendix F, Part III, of the standards; or

(b) optionally, for liner installations approved by the Minister prior to June 1, 2004, glass fiber reinforced resin or aluminum.

DIVISION VI - EMERGENCY EQUIPMENT

725.90 *First Aid Kits*

A first aid kit required by section 705.90 of the *Canadian Aviation Regulations* shall contain the supplies and equipment for a Type B kit set out in Part X, Schedule II of the *Aviation Occupational Safety and Health Regulations* (AOSH). In addition, each kit shall contain one pair of protective non-permeable gloves made of latex or equivalent material. (amended 2001/06/01)

725.91 *Emergency Medical Kit*

For aeroplanes with more than one hundred (100) passenger seats, an emergency medical kit must be carried and shall contain as a minimum, the following:

Items	Quantity
a) Sphygmomanometer	1
b) Stethoscope	1
c) Syringes (sizes necessary to administer required drugs)	4
d) Needles (sizes necessary to administer required drugs) and one safe disposal unit (amended 2005/06/01)	6
e) 50% dextrose injection, 50cc	1
f) Epinephrine/Adrenalin 1:1000, single dose ampoule or equivalent (amended 2005/06/01)	4 (amended 2005/06/01)
g) Diphenhydramine HCl injection, single dose ampoule or equivalent	2

<i>h)</i> Nitroglycerin (amended 2000/12/01)	10 tablets or equivalent (amended 2000/12/01)
<i>i)</i> Protective non-permeable latex gloves or equivalent, disposable (amended 2005/06/01)	2 pairs (amended 2005/06/01)
<i>j)</i> Bronchodilator inhaler (metered dose or equivalent) (amended 2005/06/01)	1 (amended 2005/06/01)
<i>k)</i> Acetylsalicylic acid (ASA) (amended 2005/06/01)	4 (amended 2005/06/01)
<i>l)</i> (i) CPR mask with an oxygen port and (ii) valves (amended 2005/06/01)	1 2 (amended 2005/06/01)
<i>m)</i> Intravenous (IV) administration kit (incl. Alcohol sponges, tape, bandage scissors and tourniquet) (amended 2005/06/01)	1 (amended 2005/06/01)
<i>n)</i> appropriate intravenous (IV) solution (e.g. normal saline 0.9%(500cc) (amended 2005/06/01)	1 (amended 2005/06/01)
<i>o)</i> (i) Airways, oropharyngeal (3 sizes) or (ii) Ambu bag (amended 2005/06/01)	1 set 1 (amended 2005/06/01)
<i>p)</i> Atropine (0.4-0.6 mg per ml, single dose ampoule or equiv.) (amended 2005/06/01)	1 (amended 2005/06/01)
<i>q)</i> Basic instructions for use of the drugs in the kit. (amended 2005/06/01)	1 (amended 2005/06/01)

725.95 *Survival Equipment*

(1) **Survival Equipment - Flights Over Land**

For flights over land the following standard shall be met:

- (a) the company operations manual shall show how compliance with section 602.61 of the *Canadian Aviation Regulations* is to be achieved;
- (b) a list of survival equipment shall be carried on board with information on how to use it;
- (c) a survival manual appropriate for the season and climate; and
- (d) crew member training in accordance with subsection 725.124 (30) of the *Canadian Aviation Regulations*.

(2) **Survival Equipment - Flights Over Water**

Where life rafts are required to be carried in accordance with Section 602.63 of the *Canadian Aviation Regulations*, they shall be equipped with an attached survival kit containing at least the following:

- (a) a pyrotechnic signalling device;
- (b) a radar reflector;
- (c) a life raft repair kit;
- (d) a bailing bucket and sponge;
- (e) a signalling mirror;
- (f) a whistle;
- (g) a raft knife;
- (h) an inflation pump;
- (i) dye marker;
- (j) a waterproof flashlight;
- (k) a two day supply of water, calculated using the overload capacity of the raft, consisting of one pint of water per day for each person or a means of desalting or distilling salt water sufficient to provide an equivalent amount;
- (l) a fishing kit;
- (m) a book on sea survival; and
- (n) a first aid kit containing antiseptic swabs, burn dressing compresses, bandages and anti-motion sickness pills.

DIVISION VII - PERSONNEL REQUIREMENTS

725.104 *Flight Attendant Requirements*

(1) A flight may be dispatched where accident or sickness occurs enroute and results in one less qualified flight attendant for a flight requiring two or more flight attendants if the following standard is complied with:

- (a) the flight is not departing a location where qualified flight attendant employees are stationed;
- (b) the pilot-in-command authorizes the assigning of a responsible air operator employee to an approved flight attendant take-off and landing station until that flight reaches the nearest point where qualified flight attendants are stationed;
- (c) prior to flight, the assigned employee is briefed under supervision and to the satisfaction of the pilot-in-command, on the operation of emergency exits and emergency procedures, including assigned take-off and landing stations; and
- (d) each occurrence is recorded and retained in a company file for two years.

(2) An aeroplane that has met the emergency evacuation demonstration requirements of section 525.803 of the *Airworthiness Manual* or equivalent, using no more than one flight attendant for the compliance test and has been approved by Transport Canada Civil Aviation,

Aircraft Certification, may be operated with one flight attendant provided:
(amended 2002/12/01)

- (a) the aeroplane is configured for 50 or less passenger seats;
- (b) the aeroplane has been type certificated to *FAR 25*, Amendment 25-51 or later;
(amended 2002/12/01)
- (c) subject to subsection (3), the public address system and the crew member interphone system at the approved flight attendant take-off and landing station referred to in paragraph (e) is serviceable;
(amended 2006/06/30)
- (d) emergency and normal procedures in the flight attendant manual clearly reflect the differences when one flight attendant is carried and when more than one flight attendant is carried; and
- (e) the flight attendant is assigned to occupy the approved flight attendant take-off and landing station located near a floor level exit.

(3) Despite the requirements of the Minimum Equipment List (MEL), an air operator may operate an aeroplane referred to in paragraphs (2)(a) and (b) with the public address system inoperative for 3 consecutive flight cycles, provided that the following conditions are met:
(amended 2006/06/30)

- (a) alternate operations procedures are specified in the air operator's company operations manual,
- (b) the crew member interphone system with associated calls/chimes is operative,
- (c) a megaphone is readily available and operative,
- (d) the aeroplane is not being operated from a maintenance base,
- (e) self-extension relief is not applied to this item,
- (f) a second flight attendant is added to the crew at the first opportunity, and
- (g) if the aircraft is being operated from a flight attendant base, a second flight attendant is added and is assigned to a flight attendant station, or, for aircraft equipped with only one flight attendant station, to an aisle passenger seat at an exit row.

725.106 Pilot Qualifications

(1) Training Requirements (refers to subparagraph 705.106(1)(b)(iii) of the *Canadian Aviation Regulations*)

Training requirements specified in subparagraph 705.106(1)(b)(iii) *Canadian Aviation Regulations* are initial training on type, regaining competency training, or annual training.
(amended 1998/03/23)

(2) Pilot Proficiency Check (refers to paragraph 705.106(1)(c) *Canadian Aviation Regulations*)

(a) The pilot proficiency check (PPC) shall be conducted in accordance with Schedule I, Schedule II or Schedule III of this Section.

(b) All of the manoeuvres required to satisfy renewal of an Instrument Rating shall be part of the pilot proficiency check.

(c) A pilot proficiency check shall be conducted in a manner that enables the pilot to demonstrate the knowledge and the skill respecting:

(i) the air operator's aeroplane, its systems and components;

(ii) proper control of airspeed, direction, altitude, attitude and configuration of the aeroplane, in accordance with normal, abnormal and emergency procedures and limitations set out in the aeroplane flight manual, aeroplane operating manual, (if applicable), the air operator's standard operating procedures, the check list, and any other information relating to the operation of the aeroplane type;

(iii) departure, enroute and arrival instrument procedures and other applicable procedures; and

(iv) adherence to approved procedures.

(d) Initial and recurrent Pilot Proficiency Checks shall be conducted on a combination of a Flight Training Device certified to Level 4 or higher and a Full Flight Simulator or a combination of a Flight Training Device certified to Level 6 or higher and the aeroplane, if a simulator is available in North America.

(e) For turbo-jet aeroplanes of 50 or more seats initial and recurrent Pilot Proficiency Checks shall be conducted on a Full Flight Simulator or a combination of a Full Flight Simulator and a flight training device certified to Level 4 or higher. Location of the synthetic training device will not be considered in applying this standard.

(f) The synthetic training device level of checking shall be part of the training program approval for each aeroplane type. Checking procedures not approved for the synthetic training device shall be completed in the aeroplane. The configuration of the flight training device shall closely resemble that of the aeroplane used by the air operator.

(g) A proficiency check of a pilot-in-command shall be completed in the seat normally occupied by the pilot-in-command and a check of a second-in-command shall be completed in the seat normally occupied by the second-in-command. The pilot proficiency check shall consist of a demonstration of both pilot flying (PF) duties and pilot not flying (PNF) duties.

(h) The PPC shall not be conducted as an isolated group of emergency procedures and drills. It shall be constructed with minimum disruption in a logical continuous flow reflecting a normal flight profile. Normally the pilot proficiency check is a pre-programmed activity; however, the person conducting the check may require any manoeuvre or procedure from the appropriate Schedule, necessary to determine the proficiency of the crew and to confirm that the crew can operate the aeroplane safely.

(i) Where a pilot successfully completes the pilot proficiency check, the pilot is considered as having successfully completed the flight check requirements for the renewal of the applicable instrument rating.

(j) The PPC may be transferred from one air operator to the other when the conditions of subsection 725.124(28) of the training program, Transportability of Pilot Proficiency Check - Training Required, are met.

(3) **Line Checks** (refers to paragraph 705.106(1)(d) of the *Canadian Aviation Regulations*)

(a) Pilot Line Check

The pilot line check shall consist of at least the following conducted over a typical part of the air operator's route and shall not be less than one sector:

(i) Flight Preparation

- (A) weather briefing;
- (B) dispatch procedures;
- (C) flight planning;
- (D) weight and balance, and load control;
- (E) aeroplane servicing and ramp safety;
- (F) crew briefing; and
- (G) pre-flight checks;

(ii) Operation of the Flight

- (A) pre-start safety;
- (B) starting engines;
- (C) after start checks;
- (D) radio procedures and ATC clearance;

- (E) pre-take-off checks and cabin security;
- (F) taxiing and take-off;
- (G) departure procedures;
- (H) climb procedures;
- (I) enroute procedures;
- (J) descent procedures;
- (K) approach procedures;
- (L) shutdown;
- (M) flight logs and records; and
- (N) defect recording and clearing.

(b) Cruise Relief Pilot Line Check

(i) Flight Preparation

- (A) weather briefing;
- (B) dispatch procedures;
- (C) flight planning;
- (D) weight and balance; and
- (E) crew briefing.

(ii) Operation of the Flight

- (A) enroute climb procedures;
- (B) enroute procedures;
- (C) enroute descent procedures;
- (D) flight logs and records; and
- (E) defect recording and clearing.

(4) Line Indoctrination Training (refers to paragraph 705.106(1)(d) of the *Canadian Aviation Regulations*)

The standard for Line indoctrination training is in subsection 725.124(32) of the *Commercial Air Services Standard*.

(5) Regaining Competency (refers to subsection 705.106(2) *Canadian Aviation Regulations*)

The standards for Regaining Competency are in subsections 725.124 (15) and (16) of the *Commercial Air Service Standards*.

(6) Use of a Person not Qualified in Accordance with the Canadian Aviation Regulations to Act as Pilot-in-Command or Second-in-Command (refers to subparagraph 705.106(3)(b)(ii) of the *Canadian Aviation Regulations*)

Authority may be given for other than an air operator employee pilot to occupy a flight crew seat when training, conducting line indoctrination training, and while the first air operator flight crews are completing consolidation and crew pairing minimum flight time requirements on a new aeroplane type.

The pilot shall:

(a) provide a resume, proof of background on the type of aeroplane, and recent experience appropriate to the training to be given; and

(b) hold the appropriate licence, ratings and endorsements. Where the pilot holds a foreign pilot licence, the licence and (as applicable) the instrument rating shall be validated by Transport Canada - Civil Aviation.

The pilot may be authorized to conduct pilot checks provided the requirements of the *Company Check Pilot Manual* (TP6533) are met with the exception of the minimum employment time with the air operator.

A foreign licensed pilot may be granted authority for training and checking only when a Canadian licensed pilot is not available.

During revenue flights foreign licensed pilots shall not replace Canadian licensed pilots. They can act as qualified pilot in replacement of a training pilot where the training pilot is authorized to occupy the jump seat for the purpose of crew pairing requirements (section 725.108) or transition line indoctrination (subsection 725.124(33)).

(7) Consolidation Period (refers to subsection 705.106(4) of the *Canadian Aviation Regulations*)

(a) The consolidation period shall take place in accordance with the time limits from the following sliding scale and shall begin upon successful completion of an initial Pilot Efficiency Check on each aeroplane type:

(amended 1998/03/23)

(i) 50 hours in 60 days;

(ii) 75 hours in 90 days; or

(iii) 100 hours in 120 days.

(b) If the consolidation period is not completed within 120 days, an extension to 150 days is permitted, at the air operator's discretion, under the following conditions:

- (i) on or before the 120th day, the air operator shall make a ground evaluation of the pilot's level of proficiency;
- (ii) when the pilot is assessed as not possessing a satisfactory level of competence, the pilot shall undergo additional training, followed by a supervised line operating flight, after which the consolidation period may be extended to 150 days; and
- (iii) when the pilot's proficiency is judged satisfactory, the pilot shall be observed in a supervised line operating flight, after which the consolidation period may be extended to 150 days.

(c) If at any time before the consolidation period ends a pilot is assigned to another aeroplane type, the pilot shall undergo refresher training with a training pilot or check pilot before resuming the consolidation process.

(d) If the pilot fails to complete the consolidation requirements in the maximum time of 150 days allowed, the complete line indoctrination and consolidation period requirements must be repeated.

SCHEDULE I - PILOT PROFICIENCY CHECK (PPC) - SYNTHETIC TRAINING DEVICE

(1) Pre-flight Phase

Flight Planning and Equipment Examination

(a) Flight planning and equipment examinations are not mandatory when there are, in the training records, written examinations from initial or annual training for which the validity period has not expired.

(amended 1998/03/23)

(b) Flight planning shall include a practical examination on the crew's knowledge of air operator's approved Standard Operating Procedures and the *Aeroplane Flight Manual* including aeroplane and runway performance charts, and weight and balance procedures.

(amended 1998/03/23)

(c) The equipment examination shall consist of a display of practical knowledge of the airframe, engine, major components and systems including the normal, abnormal and emergency operating procedures and limitations relating thereto.

(amended 1998/03/23)

(2) Flight Phase

(a) Taxiing

(i) the use of the taxiing check list; and

(ii) taxiing in compliance with clearances and instructions issued by the person conducting the pilot proficiency check;

(iii) where a second-in-command is undergoing the pilot proficiency check, outlined above to the extent practicable from the second-in-command position.

(b) Engine Checks

Engine checks shall be conducted as appropriate to the aeroplane type.

(c) Take-off

(i) One normal take-off to be performed in accordance with the Airplane Flight Manual;

(ii) an instrument take-off in the minimum visibility approved for the air operator;

(iii) a take-off in a minimum of a 10 kt crosswind component;

NOTE: *Any or all of the above takeoffs may be combined.*

(iv) a take-off with failure of the critical engine at a speed greater than V1 and at an altitude of less than 50 feet AGL; or at a speed as close as possible to, but greater than V1 when V1 and V2, or V1 and Vr are identical; and

(amended 2005/06/01)

(v) a rejected take-off from a speed not less than 90% of the calculated V1 or as appropriate to the aeroplane type.

(d) Instrument Procedures

Instrument procedures shall consist of IFR pre-flight preparations, terminal and enroute procedures, arrival and departure procedures, system malfunctions and where applicable, the proper programming and use of Flight Management Systems, (as applicable).

(i) An area departure and an area arrival procedures shall be performed where the crew:

(A) adheres to air traffic control clearances and instructions; and

(B) properly uses the available navigation equipment and facilities;

(ii) a holding procedure;

(iii) at least two instrument approaches performed in accordance with procedures and limitations in the *Canada Air Pilot* or in the equivalent foreign publication, or approved company approach procedure for the facility used. One of the approaches shall be a precision approach, and one a non precision approach; and

(iv) one approach and manoeuvre to land using a scene approved for circling where the air operator is authorized for approaches at the published circling minima, and is required during initial qualification check and annually thereafter.

(e) Manoeuvres

(i) At least one steep turn in each direction with a bank angle of 45° and a change in heading of at least 180° but not more than 360°.

(ii) Approaches to stalls

For the purpose of this manoeuvre the required approach to a stall is reached when there is a perceptible buffet or other response to the initial stall entry.

The following approaches to the stall are required during initial and upgrade PPC's:

(A) one in the take-off configuration, except where a zero-flap take-off configuration is normally used in that model and type of aeroplane;

(B) one in a clean configuration; and

(C) one in a landing configuration;

One of the approaches to stall shall be performed while in a turn with a bank angle of between 15° and 30°;

(iii) Steep turns and approach to stalls are not required if the PPC is conducted via either a LOFT scenario, a scripted PPC or on a fly-by wire aeroplane, and

(amended 1998/03/23)

(A) for an initial PPC on aeroplane, type, steep turns and approach to stalls have been satisfactorily demonstrated during initial training;

(amended 1998/03/23)

(B) for a semi-annual or an annual PPC if:

(amended 1998/03/23)

(I) steep turns and approach to stalls are required in the applicable annual training syllabus and they have been satisfactorily demonstrated during this training; or

(amended 1998/03/23)

(II) steep turns and approach to stalls are not required in the applicable annual training syllabus.

(amended 1998/03/23)

(f) Landings and Approaches to Landings

(i) one normal landing;

(ii) one landing from an approach in Instrument Meteorological Conditions (IMC) not greater than the minimum recommended for the approach;

(iii) one crosswind landing with a minimum of a 10 kt crosswind component;

(iv) one landing and manoeuvre to that landing with, depending on aeroplane type, engine failure as follows:

(amended 1998/09/01)

(A) for a two engine aeroplane, failure of one engine;

(B) for a three engine aeroplane, failure of the center engine combined with the failure of one outboard engine for the pilot-in-command, and failure of one outboard engine only for other than the pilot-in-command;

(C) for a four engine aeroplane, failure of two engines on the same side for the pilot-in-command and, failure of one outboard engine only for other than the pilot-in-command.

For three and four engine aeroplanes, the pilot-in-command is required to perform a two engine inoperative procedure during the initial qualification check and annually thereafter.

(v) one rejected landing and one missed approach. For the purposes of the rejected landing the landing shall be rejected at a height of approximately 50 feet when the aeroplane is approximately over the runway threshold. The rejected landing may be combined with a missed approach;

(amended 2005/06/01)

(vi) one Category II or Category III approach where these procedures are authorized in an air operator certificate. Required during the initial qualification flight and annually thereafter:

(amended 1998/09/01)

(A) where CAT II approaches are authorized in the air operator certificate, the following is required:

(I) for a pilot-in-command initial qualification:

- one CAT II ILS approach during which a practical emergency is introduced aimed at assessing crew co-ordination in decision making and the resultant missed approach; and
- a second CAT II ILS approach to a landing in CAT II weather minima;

(II) for a pilot-in-command requalification on CAT II approaches:

- at least one CAT II ILS approach to a landing annually.

(B) where CAT II and CAT III approaches are authorized in the air operator certificate, the following is required:

(I) for a pilot-in-command initial qualification:

- one CAT II ILS approach during which a practical emergency is introduced aimed at assessing crew co-ordination in decision making and the resultant missed approach; and
- a CAT III ILS approach conducted to a landing in CAT III weather minima;

(II) for a pilot-in-command requalification on CAT II and CAT III approaches:

- successive 6 month PPCs in an approved simulator will alternate CAT II and CAT III renewal checks;

(vii) one landing without the use of an auto-land system.

NOTE: Any of the landings and approaches to landings specified in this section may be combined. A minimum of two landings are required.

(g) Normal Procedures

The crew shall demonstrate use of as many of the air operator's approved Standard Operating Procedures, and normal procedures as are necessary to confirm that the crew has the knowledge and ability to properly use installed equipment, (auto-pilot and hand flown manoeuvres as appropriate).

(h) Abnormal and Emergency Procedures

(i) The crew shall demonstrate use of as many of the air operator's approved Standard Operating Procedures and abnormal and emergency procedures for as many of the situations as are necessary to confirm that the crew has an adequate knowledge and ability to perform these procedures.

(ii) systems malfunctions shall consist of a selection adequate to determine that the crew has satisfactory knowledge and ability to safely handle malfunctions.

(iii) at least two simulated engine failures, excluding failures on the runway followed by a rejected take-off, at any time during the check.

(i) Where the PPC is conducted following initial training in a level A or B training program, the following flight checking is required within 30 days after the PPC in a synthetic training device and may be run concurrent with the flight training requirements on the aeroplane type in the applicable training program:

(amended 1998/03/23)

(i) interior and exterior aeroplane pre-flight checks;

(ii) ground handling for pilots-in-command;

(iii) normal take-off, visual circuit (where possible) and landing;

(amended 1998/03/23)

(iv) a simulated engine failure procedure after take-off (at safe altitude and airspeed);

(amended 1998/03/23)

(v) a simulated engine inoperative landing; and

(amended 1998/03/23)

(vi) a normal missed approach.

(amended 1998/03/23)

SCHEDULE II - PILOT PROFICIENCY CHECK (PPC) - AEROPLANE

(1) Pre-flight Phase

(a) Flight Planning and Equipment Examination

(i) Flight planning and equipment examinations are not mandatory when there are, in the training records, written examinations from initial or annual training for which the validity period has not expired.

(amended 1998/03/23)

(ii) Flight planning shall include a practical examination on the pilot's knowledge of standard operating procedures and the *Aeroplane Flight Manual* including performance charts, loading, weight and balance and Flight Manual Supplements.

(amended 1998/03/23)

(iii) The equipment examination shall show a practical knowledge of the airframe, engine, major components and systems including the normal, abnormal, and emergency operating procedures and limitations relating thereto.

(amended 1998/03/23)

(b) Aeroplane Inspection

(i) A pre-flight aeroplane inspection that includes:

(A) a visual inspection of the exterior and interior of the aeroplane, locating each item to be inspected and explaining the purpose of the inspection;

(B) the proper use of the pre-start, start and pre-taxi check lists; and

(C) checks of the appropriate radio communications, navigation and electronic equipment and selection of the appropriate communications and navigation frequencies prior to flight.

(2) Flight Phase

(a) Taxiing

(i) taxiing procedures;

(ii) a taxiing check including:

(A) the use of the taxiing check list; and

(B) taxiing in compliance with clearances and instructions issued by the appropriate air traffic control unit or by the person conducting the pilot proficiency check;

(C) where a second-in-command is undergoing the pilot proficiency check, the taxiing check outlined above to the extent practicable from the second-in-command position.

(b) Engine Checks

Engine checks shall be conducted as appropriate to the aeroplane type.

(c) Take-off

- (i) One normal take-off to be performed in accordance with the *Airplane Flight Manual* or where the aeroplane is a turbo-jet, a noise abatement take-off performed in accordance with the *Airplane Flight Manual* (where applicable) and the *Canada Air Pilot*.
- (ii) An instrument take-off performed in the same manner as the normal take-off except that instrument flight rules are simulated at or before reaching an altitude of 200 feet above the airport elevation.
- (iii) Where practicable under existing meteorological, airport or airport traffic conditions, one crosswind take-off performed in accordance with the aeroplane operating manual where applicable;

NOTE: *Any or all of the above takeoffs may be combined.*

- (iv) a simulated engine failure after take-off (at a safe altitude and airspeed) appropriate to the aeroplane type under the prevailing conditions.

(amended 1998/03/23)

- (v) a rejected take-off explained by the candidate prior to the flight.

(d) Instrument Procedures

Instrument procedures shall consist of IFR pre-flight preparation, departure and enroute procedures, terminal procedures and system malfunction:

- (i) an area departure and an area arrival procedure shall be performed where the pilot:
 - (A) adheres to actual or simulated air traffic control clearances and instructions; and
 - (B) properly uses the available navigation facilities;
- (ii) a holding procedure;
- (iii) at least two instrument approaches performed in accordance with procedures and limitations in the *Canada Air Pilot* or the equivalent foreign publication, or approved company approach procedure for the approach facility used. Where practicable one of the approaches shall be a precision approach and one a non-precision approach;
- (iv) a circling approach, where the air operator is authorized for circling minima below ceiling 1000 feet and 3 miles ground visibility, except where local conditions beyond the control of the pilot prevent a circling approach from being performed.

(e) In Flight Manoeuvres

(i) at least one steep turn in each direction with a bank angle of 45° and a change in heading of at least 180° but not more than 360°;

(ii) Recoveries from Impending or Full Stalls

For the purpose of this manoeuvre the required recovery from a stall is initiated when there is a perceptible buffet or other response to the initial stall entry. When performed in an aeroplane the approach to stalls shall be conducted at an altitude of at least 5000 feet AGL, and if conducted above cloud at an altitude of at least 2000 feet above the cloud tops.

The following recoveries from impending or full stalls are required during initial and upgrade PPC's:

- (A) one in the take-off configuration, except where a zero-flap take-off configuration is normally used in that model and type of aeroplane;
- (B) one in a clean configuration; and
- (C) one in a landing configuration;

One of the recoveries from impending or full stall may be performed while in a turn with a bank angle of between 15° and 30°;

(f) Landings and Approaches to Landings

- (i) one normal landing which shall, where practicable, be conducted without external or internal glideslope information;
- (ii) one landing from an instrument approach, and where prevailing conditions prevent an actual landing, an approach to a point where a landing could have been made;
- (iii) one cross wind landing where practicable under existing meteorological, airport and airport traffic conditions;
- (iv) one landing and manoeuvring to that landing with a simulated failure of 50 percent of the available engines which shall be on one side of the aeroplane for the pilot-in-command and on outboard engine only for other than the pilot-in-command. Where the aeroplane type is a three engine aeroplane, the loss of power shall be an outboard engine and the centre engine for the pilot-in-command and on outboard engine for other than the pilot-in-command. For three- and four-engined aeroplanes the pilot-in-command is required to perform a two-engine inoperative procedure during initial qualification check and annually thereafter;

(v) one landing under simulated circling approach conditions except that where prevailing conditions prevent a landing, an approach to a point where a landing could have been made;

NOTE: Any of the landings and approaches to landings specified in this section may be combined. A minimum of two landings are required.

(g) Normal Procedures

The crew shall demonstrate use of as many of the air operator's approved Standard Operating Procedures, and normal procedures as are necessary to confirm that the crew has the knowledge and ability to properly use installed equipment, (auto-pilot and hand flown manoeuvres as appropriate).

(h) Abnormal and Emergency Procedures

- (i) The crew shall demonstrate use of as many of the air operator's approved Standard Operating Procedures and abnormal and emergency procedures for as many of the emergency situations as is necessary to confirm that the crew has an adequate knowledge and ability to perform these procedures;
- (ii) System malfunctions shall consist of a selection adequate to determine that the crew has satisfactory knowledge and ability to safely handle malfunctions;
- (iii) at least two simulated engine failures any time during the check.

SCHEDULE III - PILOT PROFICIENCY CHECK (PPC) - CRUISE RELIEF PILOT (CRP)

(1) Flight Planning and Equipment Examination

(a) Flight planning and equipment examinations are not mandatory when there are, in the training records, written examinations from initial or annual training for which the validity period has not expired.

(amended 1998/03/23)

(b) Flight planning shall include the CRP's knowledge of the air operator's Standard Operating Procedures and the *Aeroplane Flight Manual*.

(amended 1998/03/23)

(c) The equipment examination shall consist of a display of practical knowledge of the aeroplane systems including normal, abnormal and emergency operating procedures.

(amended 1998/03/23)

(2) Aeroplane Manoeuvres

(a) climb and descent shall be demonstrated as well as climbing and descending turns;

(b) steep turns shall be demonstrated;

(c) approach to stalls in the clean configuration shall be demonstrated;

(d) manoeuvring the aeroplane at minimum and maximum speeds (mach) at optimum altitude; and

(amended 1998/03/23)

(e) auto-pilot use shall be demonstrated, including during normal climb and descent and turbulence; and

(amended 1998/03/23)

(f) steep turns and approach to stalls are not required if the PPC is conducted via either a LOFT scenario, a scripted PPC or on a fly-by-wire aeroplane; and

(amended 1998/03/23)

(i) for an initial PPC on aeroplane type, steep turns and approach to stalls have been satisfactorily demonstrated during initial training;

(amended 1998/03/23)

(ii) for a semi-annual PPC if:

(amended 1998/03/23)

(A) steep turns and approach to stalls are required in the applicable annual training syllabus and they have been satisfactorily demonstrated during this training; or

(amended 1998/03/23)

(B) steep turns and approaches to stalls are not required in the applicable annual training syllabus.

(amended 1998/03/23)

(3) Normal procedures

The CRP shall demonstrate use of as many of the air operator's approved Standard Operating procedures and normal procedures for installed systems, devices and aids as are necessary to confirm that the CRP has the knowledge and ability to properly use installed equipment.

(4) Abnormal and Emergency Procedures

The CRP shall demonstrate use of as many of the air operator's Standard Operating Procedures and abnormal and emergency procedures for as many of the emergency situations relating to cruise flight as are necessary to confirm that the CRP has an adequate knowledge and ability to perform these procedures.

(5) Instrument Rating Renewal

All of the manoeuvres required to satisfy renewal of an Instrument Rating shall be part of the proficiency check.

725.107 Flight Engineer and Second Officer Qualifications

(1) Flight Engineer/Second Officer Check (refers to paragraph 705.107(1)(b) of the *Canadian Aviation Regulations*)

(a) The flight engineer and second officer check shall be conducted in accordance with the applicable subsections and paragraphs of the PPC Schedule I or Schedule II in section 725.106. The check shall be run concurrent with a pilot proficiency check.

(b) A flight engineer/second officer check shall be conducted in a manner that enables the FE/SO to demonstrate the knowledge and the skill respecting:

- (i) the air operator's aeroplane, its systems and components;
- (ii) proper control of the systems and components in accordance with normal, abnormal and emergency procedures and limitations set out in the aircraft flight manual, the aeroplane operating manual (if applicable), the air operator's standard operating procedures, the check list, and any other information relating to the operation of the aeroplane type;
- (iii) adherence to approved procedures;
- (iv) workload management and coordination; and
- (v) problem solving and decision making abilities.

(c) Each manoeuvre or procedure specified in these standards, shall be performed in a synthetic training device approved for use by the air operator. Manoeuvres or procedures that are not approved for checking in the synthetic training device shall be conducted in the aeroplane. Where there is no synthetic training device for the aeroplane, flight engineer and second officer proficiency checks shall be conducted on the aeroplane.

(2) Flight Engineer/Second Officer Line Indoctrination (refers to paragraph 705.107(1)(c) of the *Canadian Aviation Regulations*)

Line indoctrination training for flight engineers and second officers shall be conducted in accordance with subsection 725.124 (32).

(3) Training for a Qualified Pilot-in-Command or Second-in-Command Acting as Second Officer (refers to paragraph 705.107(2)(a) of the *Canadian Aviation Regulations*)

(a) Definition of "cruise portion of a flight" is found in section 725.29.

(b) The required training shall be done at the flight engineer/second officer station.

(amended 1998/03/23)

(c) the training syllabus shall include duties and procedures as they apply to the flight engineer/second officer for the cruise portion of the flight.

(amended 1998/03/23)

(4) Check for a Qualified Pilot-in-Command or Second-in-Command Acting as Second Officer (refers to paragraph 705.107(2)(b) of the *Canadian Aviation Regulations*)

(a) Definition of “cruise portion of a flight” is found in section 725.29.

(b) The check shall be in accordance with parts of the check in subsection 725.107(1) that apply to the cruise portion of the flight; and

(amended 1998/03/23)

(c) the check shall be conducted concurrently with a PPC.

(amended 1998/03/23)

725.108 Crew Pairing

(1) Crew pairing restrictions establish minimum experience requirements for a flight crew.

(2) Crew pairing restrictions apply when any of the following situations apply to either the pilot-in-command or the second-in-command when at the employ of an air operator:

(amended 2002/06/01)

(a) initial appointment to pilot-in-command or second-in-command;

(amended 2002/06/01)

(b) the first upgrade from second-in-command to pilot-in-command on any aeroplane type except the same aeroplane type;

(amended 1998/09/01)

(c) the first transition from a reciprocating-powered aeroplane to a turbo-prop or turbo-jet powered aeroplane;

(amended 2002/06/01)

(d) the first transition from a turbo-prop-powered aeroplane to a turbo-jet-powered aeroplane;

(amended 2002/06/01)

(e) the first transition to an aeroplane whose control systems use a technology or present information in a manner that differs significantly in access, interpretation, or usage from that with which the pilot is familiar;

(amended 2002/06/01)

(f) upon completion of training on a second aeroplane type which is not covered by a common type rating, regardless of previous experience, when the pilot will be flying both types of aeroplanes in service; or

(amended 2002/06/01)

(g) the transition to an aeroplane type on which the crew member has no previous experience.

(amended 2002/06/01)

(3) When crew pairing restrictions apply, they come into effect after completion of the Pilot Proficiency Check in the new position or new type, and remain in effect until the completion of the consolidation period for this flight crew member. (See subsection 725.106(7) for consolidation period)

(4) When, after completion of the line indoctrination, crew pairing restrictions apply to one of the flight crew members, the other flight crew member shall meet the following requirements:

(a) has completed the consolidation period; or

(b) for the purpose of a transition period from previous regulation to the new *Canadian Aviation Regulations*, has gained experience in position on the aeroplane type prior to the introduction of consolidation requirements.

(5) When, after completion of their individual line indoctrination, crew pairing restrictions apply to the pilot-in-command and to the second-in-command, a training pilot who meets the requirements of subsection 725.124(4) shall occupy the jump seat.

(6) Hours applying to crew pairing restrictions are valid for line indoctrination and the consolidation period referred to in Section 725.106.

725.111 *Route and Aerodrome Qualifications*

Training and qualification requirements are in subsection 725.124(35).

725.113 *Validity Period*

(1) Six month Recurrency Training that is Approved as a Substitute for the Pilot Proficiency Check (refers to paragraph 705.113(2)(b) of the *Canadian Aviation Regulations*) (amended 2003/06/01)

Pilots, after an initial PPC on type, shall be required to complete at least one recurrent PPC. After this first recurrent PPC, the pilot proficiency requirements may be renewed by the alternate training below, PPC being required once every 12 months:

(a) the air operator submits for approval a training program which provides for training in lieu of the PPC:

(amended 1998/03/23)

(i) for all advanced technology aeroplanes, as listed in (iii) below, and all turbo-jets certificated for 50 or more passengers, this training shall be conducted in a synthetic training device, regardless of synthetic training device location;

(ii) for other Transport Category aeroplanes, this training shall be conducted in a synthetic training device if a synthetic training device for the type is available in North America, or on the aeroplane if a synthetic training device is not available in North America;

(iii) “advanced technology aeroplanes” includes the following types:

(A) Airbus A319, A320, A321, A330 and A340;

(B) Boeing B757/767, B747-400, B737-600/700/800/900; and
(amended 2003/06/01)

(C) Canadair CL65;

(b) the training shall be in addition to the normally required training and be of 1.0 to 1.5 hours duration. Where the synthetic training device capability meets the requirements of a LOFT in accordance with subsection 725.124(20) of the *Commercial Air Services Standards*, the training shall incorporate a LOFT scenario;
(amended 2003/06/01)

(c) if training is completed in the synthetic training device, the 12 month PPC must also be completed in the synthetic training device; and

(amended 1998/03/23)

(d) where, as specified in subparagraph (1)(a)(ii), no synthetic training device is available and the training is conducted on an aeroplane, the training shall incorporate a scenario approved by the Minister as per paragraph (1)(a) which shall consist of one of the following:

(amended 2003/06/01)

(i) a training flight patterned on a PPC profile (as per Schedule II of section 725.106);

(ii) additional approach and holding manoeuvres combined with simulated powerplant failures and system problems; or

(iii) an alternate training program submitted by the air operator and approved by the Minister.

(2) Advanced Qualification Program as a Substitute for the Pilot Proficiency Check

(refers to paragraph 705.113(2)(c) of the *Canadian Aviation Regulations*)

The advanced qualification program and proficiency evaluation are under development and will be available at a later date.

(3) PPC, Line Check or Training Expired for 24 months or more (refers to

paragraph 705.113(6) of the *Canadian Aviation Regulations*)

Where the flight crew member’s pilot proficiency check, line check or training has expired for a period of 24 months or more, that flight crew member shall successfully complete the air operator’s initial training program and a pilot proficiency check on the type of aeroplane.

(4) Flight Dispatcher Competency Check or Training Expired for 12 Months or More
(refers to subsection 705.113(7) of the *Canadian Aviation Regulations*)

Where the flight dispatcher's competency check or training has expired for a period of 12 months or more, that flight dispatcher shall successfully complete the air operator's flight dispatcher requalification training program in paragraph 725.124(21)(k).

(5) Flight Attendant Training
(amended 2000/12/01)

Note:

Information regarding the validity period of flight attendant training can be found in the introduction section of the Flight Attendant Training Standard (TP12296E).

DIVISION VIII - TRAINING

725.124 Training Program

The air operator training program syllabus shall include all applicable subsections of this standard.

(1) Training Standard

(a) Training Program Standard to Flight Crew Members

(i) Training Syllabus

The flight crew training program requires a syllabus that shall include sufficient time to ensure coverage of the subject matter to meet the performance objective during each period and the total programmed hours set aside for the training.

(ii) Ground Training Examinations

The ground training program shall provide a means of evaluating the trainee after completion of the syllabus by completion of examination with a review and correction of any errors. Training examinations shall be comprehensive, and periodically reviewed and updated.

(iii) Aeroplane Type Training

(A) A type training program is to be titled as to the type to which it applies. The program shall stress the operation (normal, emergency and malfunctions) of the aircraft systems and equipment. Instruction related to components and systems that flight crews cannot control, influence or operate should be minimized.

(B) With the exception of Regaining Competency Training, pilots shall receive training in both the pilot-flying and the pilot-not-flying duties.

(b) Training Program Standard to All Crew Members**(i) Manuals**

Manuals, if applicable, shall be provided during training to each trainee on the subject matter to be taught.

(ii) Training Aids

Relevant training aids such as fire extinguishers, life preservers, rafts, aircraft components, static aircraft, etc. shall be available relevant to the program being presented.

(iii) Examinations

Comprehensive examinations shall be used to validate competence of the trainee.

(iv) Specific Training

(amended 1998/03/23)

When the air operator is allowed to revert from type “A” or “B” operational control system to a type “C” system, specific training for pilots must be provided to explain the differences between the systems.

(amended 1998/03/23)

(2) Crew Training on a Contract Basis

An air operator may contract crew member training to another organization provided:

- (a) the arrangement is clearly provided for in the approved training program;
- (b) the outside organization uses the manuals and publications used by the air operator (SOP's, *Aircraft Flight Manual*, *Aircraft Operating Manual*, if applicable, *Company Operations Manual*, etc.);
- (c) the air operator ensures that the training is conducted in accordance with the approved program;
- (d) where type training is conducted the training is provided on the type and model operated by the air operator unless otherwise provided for in the approved training program; and
- (e) the air operator maintains training records as required by Subpart 705 of the *Canadian Aviation Regulations*.

(3) Training Facilities

Training facilities shall be adequate to ensure that training objectives can be achieved. Facilities shall be:

- (a) quiet and free of distractions;
- (b) suitably lighted for the type of instructions to be given, e.g. lectures, slides and audio-visual;

(c) furnished with sufficient desks, chairs, chalkboards and other appropriate equipment; and

(d) equipped with training aids such as films, Vu-graphs, system components, audio-visual, aeroplane manuals or computer based systems.

(4) Training Personnel

(a) Qualifications of Training Personnel - General

(i) All training personnel shall have been briefed on:

(A) the objectives and standards of the air operator's training program;

(B) the effective use of training devices used in the program;

(C) safety in the training environment; and

(D) pertinent *Canadian Aviation Regulations* and *Commercial Air Service Standards*;

(ii) All training personnel shall have demonstrated, to the satisfaction of the air operator, a proficient level of practical and theoretical knowledge of:

(A) the subject the instructor is to teach;

(B) the aeroplane type, the instructor is to teach;

(C) the basic principles of learning and techniques of instruction;

(D) preparation and use of lesson plans;

(E) briefing and debriefing techniques relative to the exercises; and

(F) all associated training devices.

(b) Qualifications of Instructor - Ground Training

If conducting aeroplane type training, the instructor - ground training shall have successfully completed the ground school for the type of aeroplane.

(c) Qualifications and Responsibilities of a Training Pilot (Flight)

(i) Qualifications

(A) hold a valid Airline Transport Pilot Licence, a valid Instrument Rating, and a type rating for the type of aeroplane on which training will be given;

(B) be qualified for line flying on the type of aeroplane; and

(C) know the content of the *Aircraft Flight Manual*, *Aircraft Operating Manual* (if applicable), *Company Check Pilot Manual*, *Company Operations and Training Manuals* and the operator's Standard Operating Procedures for the aeroplane type, and the provisions of the regulations and standards.

(ii) Responsibilities

The Training Pilot is responsible for:

- (A) monitoring the operation and identifying problems which may require the provision of extra training or changes in operational procedures;
- (B) together with the chief pilot, the establishment and promulgation of the standards and piloting techniques with which flight crew will be expected to comply during flight operations and which the flight crew will be required to demonstrate during initial and recurrent checks;
- (C) conducting ground, synthetic flight training device and flight training of all flight crew in accordance with the approved training program;
- (D) conducting line indoctrination;
- (E) supervision of the standards and recommending amendments to the respective aeroplane operating manuals and standard operating procedures;
- (F) maintaining the air operator's training records;
- (G) liaison with crew scheduling concerning training details; and
- (H) any other duties assigned by the Chief Pilot.

(d) Qualifications and Responsibility of a Training Pilot (Synthetic Training Device)**(i) Qualifications**

- (A) hold or have held an Airline Transport Pilots Licence or equivalent and an Instrument Rating appropriate for the class of aeroplane;
- (B) have completed the air operator's ground school and synthetic training device program for the type of aeroplane;
- (C) have successfully completed within the past 12 months a pilot proficiency check in the synthetic training device or aeroplane for that type;
- (D) know the content of the *Aeroplane Operating Manual* (if applicable), *Aeroplane Flight Manual*, *Operations and Training Manuals* and as applicable the *Company Check Pilot Manual* and the air operator Standard Operating Procedures for the aeroplane type, and the provisions of the regulations and standards; and
- (E) have received instruction on the operation of the synthetic training device from an instructor qualified to operate the synthetic training device.

(ii) Responsibilities

The Training Pilot is responsible for:

- (A) monitoring the operation and identifying problems which may require the provision of extra training or changes in operational procedures;
- (B) together with the chief pilot, the establishment and promulgation of the standards and piloting techniques with which flight crew will be expected to comply during flight operations and which the flight crew will be required to demonstrate during initial and recurrent checks;
- (C) conducting ground and synthetic flight training device training of all flight crew in accordance with the approved training program;
(amended 1998/03/23)
- (D) supervision of the standards and recommending amendments to their respective aeroplane operating manuals and standard operating procedures;
- (E) maintaining the air operator's training records;
- (F) liaison with crew scheduling concerning training details; and
- (G) any other duties assigned by the Chief Pilot.

NOTE: *Requirements for the use of other than an air operator employee pilot for training and checking are in Section 725.106.*

(e) Qualifications of a LOFT Facilitator

LOFT facilitators shall:

- (i) have completed a Crew Resource Management Course in the last three years;
- (ii) have at least two years of line flying with the air operator for which the duties will perform;
- (iii) have previous experience in training of air operator crews;
- (iv) hold or have held a valid Airline Transport Pilot Licence with the appropriate aeroplane endorsement or at least the equivalent experience that could lead to the issue of this license;
- (v) have completed the initial/recurrent training approved in the company operations manual;
- (vi) maintain line familiarity of at least six flight sectors within the preceding twelve months on the aeroplane on which the instruction will be given; and
- (vii) demonstrate yearly, on a check, a satisfactory level of proficiency and knowledge of air operator operations.

(f) Flight Dispatcher Instructors and Check Flight Dispatchers**(i) Flight Dispatcher Instructors**

(A) Flight dispatcher specific training instructors shall be knowledgeable and able to present their subject in an effective manner.

(B) Where the instructors used to teach specific course material are not themselves qualified flight dispatchers, a qualified flight dispatcher shall be available for co-ordinating and answering questions relating to the practical application of the course material.

(ii) Check Flight Dispatchers

Initial and recurrent competency checks for flight dispatchers shall be conducted by a check flight dispatcher nominated by the air operator and acceptable to Transport Canada - Civil Aviation.

(g) Qualifications and Responsibilities of Training Flight Engineer/Second Officer (Flight)

(amended 1998/03/23)

(i) Qualifications

(A) be qualified for line flying on the type of aeroplane;

(B) know the content of the *Aircraft Flight Manual*, *Aircraft Operating Manual* (if applicable), *Company Operations and Training Manuals* and the operator's Standard Operating Procedures for the aeroplane type, and the provisions of the regulations and standards; and

(C) have received instruction on the operation of the synthetic flight training device from an instructor qualified to operate the synthetic training device.

(ii) Responsibilities

The training flight engineer/second officer (flight) is responsible for:

(A) conducting ground, synthetic flight training device and flight training of all flight crew members with duties at the flight engineer station in accordance with the approved training program;

(B) conducting checks in flight or in a synthetic flight training device of all flight crew members with duties at the flight engineer station;

(C) conducting line indoctrination training of all flight crew members with duties at the flight engineer station;

(D) supervising the standards and recommending amendments to the respective aeroplane operating manuals and standard operating procedures;

(E) maintaining the air operator's training records;

- (F) liaising with crew scheduling concerning training details; and
- (G) performing any other duties assigned by the chief pilot.

(h) Qualifications and Responsibilities of Training Flight Engineer/Second Officer (Synthetic Flight Training Device)

(amended 1998/03/23)

(i) Qualifications

- (A) have completed the air operator's ground school and synthetic flight training device program for the type of aeroplane;
- (B) have successfully completed within the past 12 months a flight engineer check in a synthetic flight training device for that type;
- (C) know the content of the *Aircraft Flight Manual*, *Aircraft Operating Manual* (if applicable), *Company Operations and Training Manuals* and the operator's Standard Operating Procedures for the aeroplane type, and the provisions of the regulations and standards; and
- (D) have received instruction on the operation of the synthetic training device from an instructor qualified to operate the synthetic training device.

(ii) Responsibilities

The training flight engineer/second officer (synthetic flight training device) is responsible for:

- (A) conducting ground and synthetic flight training device training of all flight crew members with duties at the flight engineer station in accordance with the approved training program;
- (B) conducting check in a synthetic flight training device of all flight crew members with duties at the flight engineer station;
- (C) supervising the standards and recommending amendments to the respective aeroplane operating manuals and standard operating procedures;
- (D) maintaining the air operator's training records;
- (E) liaising with crew scheduling concerning training details; and
- (F) performing any other duties assigned by the chief pilot.

(5) Company Indoctrination Training

This training is required upon employment for all persons assigned to an operational control function including base managers, pilots and persons responsible for flight watch or flight following. The program shall ensure that persons involved in control of flight operations are aware of their responsibilities, know company reporting relationships and are competent to fulfil their assigned duties related to flight operations. Company indoctrination training shall include as applicable:

- (a) *Canadian Aviation Regulations* and airline standards;
- (b) air operator certificate and operating conditions;
- (c) company organization, reporting relationships and communication procedures;
- (d) flight planning and operating procedures;
- (e) fuelling procedures including procedures for fuelling with passengers on board and fuel contamination precautions;
- (f) critical surface contamination and safety awareness program;
- (g) passenger safety briefings and safe movement of passengers to/from the aeroplane;
- (h) use and status of company operations manual including maintenance release procedures and accident/incident reporting procedures;
- (i) use of minimum equipment lists (if applicable);
- (j) windshear, aeroplane icing, and other meteorological training appropriate to the area of operations;
- (k) navigation procedures and other specialized operations applicable to the operator;
- (l) accident/incident reporting;
- (m) passenger on board medical emergency;
- (n) handling of disabled passengers;
- (o) air operator's safety management system;
(amended 2005/05/31)
- (p) operational control system;
- (q) weight and balance system procedures;
- (r) standard operating procedures (if applicable);
(amended 1998/03/23)
- (s) pre-flight crew-member briefing; and
(amended 1998/03/23)

(t) when the air operator is allowed to revert from type “A” or “B” operational control system to a type “C” system, specific training for flight dispatchers must be provided to explain the differences between the systems.

(amended 1998/03/23)

(6) Technical Ground Training - Initial and Annual for Flight Crew Members other than Cruise Relief Pilots

(amended 2004/12/01)

(a) Initial Ground Training

(amended 1998/03/23)

This training shall ensure that each flight crew member is knowledgeable with respect to aeroplane systems and all normal, abnormal and emergency procedures. The following subjects shall be included:

- (i) aeroplane systems operation and limitations as contained in the aeroplane flight manual and aeroplane operating manual, and standard operating procedures;
- (ii) operation of all equipment that is installed in all aeroplanes of the same type operated by the air operator;
- (iii) differences in equipment that is installed in all aeroplanes of the same type in the air operators fleet;
- (iv) applicable standard operating procedures for pilot flying and pilot not flying duties for normal, abnormal and emergency procedures for the aeroplane;
- (v) aeroplane performance and limitations; and
- (vi) weight and balance procedures.

(b) Annual Ground Training

(amended 1998/03/23)

- (i) the annual ground training syllabus shall be a review of aeroplane systems and operations; and

(amended 1998/03/23)

- (ii) a briefing must be provided on changes that have occurred to the aeroplane or its operation since flight crew member’s last annual training.

(amended 1998/03/23)

(c) Additional Initial Ground Training for Flight Engineer Second Officer

(amended 1998/03/23)

Technical ground training for flight engineer/second officer shall be equivalent to that given to pilots and shall specialize in the subject matter applicable and pertinent to their duties. The following additional items shall be included in the initial technical ground training syllabus for flight engineer/second officer:

(amended 1998/03/23)

- (i) external inspection;

(amended 1998/03/23)

(ii) fuelling and de-fuelling procedures;

(amended 1998/03/23)

(iii) management of fuel pressurization and other systems;

(amended 1998/03/23)

(iv) use of dip/drip sticks;

(amended 1998/03/23)

(v) maintenance logs, MEL and aeroplane release procedures;

(amended 1998/03/23)

(vi) towing procedures; and

(amended 1998/03/23)

(vii) the installation of protective covers.

(amended 1998/03/23)

(7) Cockpit Procedures Training for Flight Crew Members

(amended 2004/12/01)

This training may be conducted in conjunction with aeroplane systems training, and may be carried out in either the aeroplane or in an approved synthetic training device or other training device. The following subjects shall be included:

(a) normal, abnormal and emergency operation and control of the aeroplane systems;

(b) operation of specialized aeroplane systems in the air operator's fleet;

(c) standard operating procedures; and

(d) differences in equipment, and layout between aeroplanes of the same type in the air operator's fleet.

(8) Synthetic Flight Training Device

(a) A Synthetic Flight Training Device is classified as:

(i) full flight simulator (FFS); or

(ii) flight training device(FTD)

(b) All initial and recurrent flight training shall be conducted on a combination of FTD certificated to Level 4 or higher and an FFS or a combination of FTD certificated to Level 6 or higher and the aeroplane.

(c) For turbo-jet aeroplanes of 50 or more seats, with the exception of airborne training authorized under this standard, all initial and recurrent training shall be conducted on an FFS or on a combination of FFS and FTD certified to Level 4 or higher.

(8A) Synthetic Flight Training Device or Aeroplane Training - Initial, Upgrade and Annual for Flight Crew Members other than Cruise Relief Pilots
(amended 2004/12/01)

(a) Initial and upgrade training for pilots shall be done in accordance with one of the following training programs as set out in the applicable subsection of section 725.124:

- (i) subsection (9), level A training program;
- (ii) subsection (10), level B training program;
- (iii) subsection (11), level C training program;
- (iv) subsection (12), level D training programs; or
- (v) subsection (13), aeroplane only flight training program.

(b) Initial training for flight engineer/second officer shall include the applicable items of training programs in paragraph (a).

(c) Annual training for all flight crew members for synthetic flight training device or aeroplane shall meet the following requirements:

- (i) all items for the initial training syllabus must be covered over a definite period of time (through a cycle); and
- (ii) a briefing must be provided on changes that have occurred to the aeroplane or its operation since pilot's last annual training.

(d) Training before PPC or flight engineer/second officer check shall be provided in all cases prior to the conduct of a PPC or a flight engineer/second officer check.

(9) Level A Training Program for Pilots other than Cruise Relief Pilots
(amended 2004/12/01)

An air operator with an approved Level A training program using an approved Level A or better FFS is permitted to conduct most initial, upgrade and recurrent training in that simulator. Additionally, flight training in an aeroplane must be carried out for general handling and landing manoeuvres for initial training.

(amended 1998/03/23)

(a) The following training in standard operating procedures for normal, abnormal and emergency operation of the aeroplane systems and components shall be carried out in the FFS:

- (i) use of aeroplane checklists;
- (ii) flight and cabin crew co-operation, command and co-ordination;
- (iii) aeroplane and cargo fire on the ground and while airborne;
- (iv) engine fire and failure;

- (v) effects of engine icing and anti-ice operation;
- (vi) take-off, landing and flight with the critical engine inoperative including driftdown and engine inoperative performance capabilities;
- (vii) on 3- and 4-engine aeroplanes inflight procedures including approach and landing with 2 engines inoperative (applies to P-I-C only);
- (viii) loss of pressurization and emergency descent (if applicable);
- (ix) flight control failures and abnormalities;
- (x) hydraulic, electrical and other system failures;
- (xi) failure of navigation and communication equipment;
- (xii) pilot incapacitation - recognition and response during various phases of flight;
- (xiii) approach to the stall and recovery procedure with ground contact imminent and ground contact not a factor (clean, take-off and landing configuration);
- (xiv) buffet boundary onset, steep turns (45° of bank), and upset training (initial and every two years thereafter);
(amended 2002/06/01)
- (xv) aeroplane performance for climb, cruise, holding, descent and landing;
- (xvi) normal, noise abatement and performance limited take-offs;
- (xvii) take-off and landing data calculations;
- (xviii) rejected take-off procedures and rejected landings;
- (xix) passenger and crew evacuation;
- (xx) Flight Management Computer System (FMCS), Ground Proximity Warning System (GPWS), Airborne Collision Avoidance System (ACAS), Traffic Alert and Collision Avoidance System (TCAS) and other specialized aeroplane equipment (where available);
(amended 2004/12/01)
- (xxi) inadvertent encounters with moderate or severe in flight icing conditions.
(amended 1998/09/01)

(b) Where the air operator seeks authorization for flight in IMC the following training in flight planning and instrument flight procedures shall be included:

- (i) departure, enroute, holding and arrival; and
- (ii) all types of instrument approaches and missed approaches in minimum visibility conditions using all levels of automation available (as applicable).

(c) In addition to the training in a Level A synthetic training device, the flight check in PPC Schedule I of section 725.106 is part of this training program.

(amended 1998/03/23)

(d) If a Level A flight simulator has differences in performance, systems, or cockpit layout and configuration from the air operator's aeroplane, additional training on these differences shall be provided.

(10) Level B Training Program for Pilots other than Cruise Relief Pilots

(amended 2004/12/01)

An air operator with an approved Level B training program using an approved Level B or better FFS is permitted to conduct most initial, upgrade and recurrent training in that simulator. Additionally, flight training in an aeroplane must be carried out for general handling and landing manoeuvres for initial training.

(amended 1998/03/23)

(a) In addition to those items of training required in paragraphs 725.124(9)(a) and (b), training in an approved Level B flight simulator shall include recovery from turbulence and windshear on take-off and approach;

(amended 2004/12/01)

(b) In addition to the training in a Level B synthetic flight training device, the flight check in PPC Schedule I of section 725.106 is part of this training program.

(amended 2004/12/01)

(c) If a Level B flight simulator has differences in performance, systems, or cockpit layout and configuration from the air operator's aeroplane additional training on these differences shall be provided.

(amended 2004/12/01)

(11) Level C Training Program for Pilots other than Cruise Relief Pilots

(amended 2004/12/01)

(a) An air operator with an approved Level C training program using an approved Level C FFS is permitted zero flight time training for candidates with at least second-in-command experience on a similar aeroplane with the same air operator or has had verifiable line currency as a second-in-command on a similar aeroplane within the previous two years. Candidates who do not qualify shall undergo aeroplane flight training in accordance with those items listed in paragraph 725.124(9)(c).

(amended 2004/12/01)

(b) For the purpose of this provision, "similar aeroplane" means both aeroplanes are subject to Subpart 705 of the *Canadian Aviation Regulations* except where the two types have been grouped for PPC purposes as:

(i) turbo-jet to turbo-jet - provided both are certified as Transport Category Aeroplanes;

(ii) turbo-prop to turbo-prop - provided both are certified as Transport Category Aeroplanes; and/or

(iii) reciprocating to reciprocating - provided both are certified for operations under Subpart 705 of the *Canadian Aviation Regulations*.

(c) In addition to those items of training required in paragraph 725.124(10)(a), and the flight check in PPC Schedule I of section 725.106, training in an approved Level C flight simulator shall include:

(amended 2004/12/01)

(i) manoeuvring of the aeroplane on the ground;

(ii) crosswind take-offs and landings to 100% of the published crosswind component;

(iii) a visual training program in the flight simulator to ensure VFR flight skills, covering scenarios of dusk and night with variable weather and visibilities. This program shall include the following:

(A) normal and crosswind take-offs, visual circuits and landings with variable wind, runway illusion and surface conditions;

(B) engine inoperative approach and landing;

(C) engine failure procedures during take-off and missed approach;

(D) no electronic glideslope approach and landing; and

(E) approaches and landings with flight control failures and abnormalities.

(iv) a simulated line flight comprising at least 2 sectors (one as pilot flying and another as pilot not flying).

(d) If a Level C flight simulator has differences in performance, systems, or cockpit layout and configuration from the air operator's aeroplane, additional training on these differences shall be provided.

(12) Level D Training Program for Pilots other than Cruise Relief Pilots

(amended 2004/12/01)

(a) An air operator with an approved Level D training program using an approved Level D FFS is permitted zero flight time training.

(b) In addition to the training required for a Level C program, the following FFS training shall be carried out at an appropriate point in the training program.

(i) A VFR training program in the Level D flight simulator of at least 4 hours per crew (2 hours as pilot flying and 2 hours of pilot not flying) is required, to ensure visual flight skills to cover either day or dusk and night with variable weather and visibility scenarios. This program shall include the following:

- (A) normal and crosswind take-offs, and visual circuits and landings, with variable wind, runway illusion and surface conditions;
- (B) engine inoperative approach and landing;
- (C) engine failure procedures during take-off and missed approach;
- (D) no visual aids approaches and landings; and
- (E) approaches and landings with flight control failures and abnormalities;

NOTE: where a pilot demonstrates a satisfactory level of performance in visual manoeuvres, the operator may use the time specified in (i) above as additional training to that required by any of the Level C requirements.

(ii) Simulated line flights of at least 2 sessions (2 sectors as pilot flying and 2 sectors as pilot not flying) are required. Pilot flying duties shall be carried out from the appropriate seat.

(c) If a Level D flight simulator has differences in performance, systems, or cockpit layout and configuration from the air operator's aeroplane, additional training on these differences shall be provided.

(13) Aeroplane only Flight Training Program

(a) An aeroplane only flight training program will only be approved:

- (i) for a reciprocating powered aeroplane;
- (ii) for a turbo-jet aeroplane, if no simulator exists; or
- (iii) for a turbo-prop aeroplane, if no simulator exists within North America.

(b) Any simulated failure of aeroplane systems shall only take place under operating conditions which do not jeopardize safety of flight.

(c) The training program shall include Standard Operating Procedures for normal, abnormal and emergency operation of the aeroplane systems and components with the following:

- (i) use of aeroplane checklists including interior and exterior pre-flight checks;
- (ii) manoeuvring of the aeroplane on the ground;
- (iii) aspects of flight and cabin crew co-operation, command and co-ordination;

(iv) normal take-off, visual circuit, approach and landing which, for initial training, shall be conducted by day and by night;

(amended 1998/09/01)

(v) simulated aeroplane and cargo fire on the ground and while airborne;

(vi) simulated engine fire and failure;

(vii) briefings on effects of airframe and engine icing and anti-ice operation;

(viii) take-off, landing and flight with the critical engine simulated inoperative, including driftdown and engine inoperative performance capabilities;

(ix) on 3- and 4-engine aeroplanes inflight procedures including approach and landing with 2 engines simulated inoperative (applies to pilot-in-command only);

(x) simulated loss of pressurization and emergency descent;

(xi) no electronic glide slope approach and landing;

(xii) simulated hydraulic, electrical and other system failures;

(xiii) simulated flight control failures and degraded states of operation, while in-flight, and during take-off and landing; (as applicable)

(xiv) simulated failure of navigation and communication equipment;

(xv) simulated pilot incapacitation - recognition and response;

(xvi) briefing on recovery from turbulence and windshear on take-off and approach;

(xvii) approach to the stall and recovery procedure simulating ground contact imminent and ground contact not a factor (clean, takeoff and landing configuration);

(xviii) buffet onset boundary, steep turns (45° of bank) and other flight characteristics (as applicable for initial and upgrade only);

(xix) aeroplane performance for climb, cruise, holding, descent and landing;

(xx) normal and performance limited take-offs;

(xxi) crosswind take-off and landing, and briefing on contaminated runway take-off and landing;

(xxii) take-off and landing data calculations;

(xxiii) simulated rejected take-off procedures (at or below 60 kts) and rejected landings;

(xxiv) briefing on crew and passenger evacuation procedures; and

(xxv) other specialized aeroplane equipment (where applicable).

(d) Where the air operator is authorized for VFR flight at night or flight in IMC, the training program shall also include flight planning and instrument flight procedures with the following:

- (i) departure, enroute, holding and arrival; and
- (ii) all types of instrument approaches and missed approaches in simulated minimum visibility conditions, including circling approaches (where applicable) using all levels of automation available (as applicable).

(14) Emergency Procedures Training for Flight Crew Members

(amended 2004/12/01)

This training is required on an annual basis and shall include instruction in the location and operation of all emergency equipment. Training devices approved to simulate flight operating emergency conditions, static aeroplanes, ground demonstrations, classroom lectures, films or other devices may be used for training provided the method used ensures that each flight crew member is adequately trained in the operation or use of all emergency equipment. Where practical training is required, it shall include the following and be completed on initial training and every three years thereafter:

- (a) fire in the air and on the ground;
- (b) use of fire extinguishers including practical training;
- (c) operation and use of emergency exits including practical training;
- (d) passenger preparation for an emergency landing or ditching, (as applicable) including practical training;
- (e) emergency evacuation procedures including practical training;
- (f) donning and inflation of life preservers (when equipped) including practical training;
- (g) removal from stowage, deployment, inflation and boarding of life rafts/slide rafts (when equipped) including practical training;
- (h) pilot incapacitation including practical training;
- (i) hijacking, bomb threat and other security procedures;
- (j) passenger on board medical emergency; and
- (k) special emergency procedures when the aeroplane is used on MEDEVAC operations including patient evacuation in emergency situations.

(15) Regaining Competency Training - Recency not Maintained for Pilots other than Cruise Relief Pilots

(amended 2004/12/01)

(a) For air operators using an approved level A FFS, the following must be completed for pilots who have not maintained, for a period between 90 and 180 days, their recency qualifications in accordance with paragraph 705.106(1)(b) of the *Canadian Aviation Regulations*:

(amended 2000/12/01)

(i) a briefing on changes that have occurred to the aeroplane or its operation since the pilot's last flight,

(amended 2000/12/01)

(ii) a 90 minute simulator exercise that includes normal take-offs and landings, engine failure on take-off and engine failure on the missed approach, and

(amended 2000/12/01)

(iii) a line check of at least three sectors during which the candidate will complete all take-offs and landings.

(amended 2000/12/01)

(b) For air operators using an approved level B, C or D FFS, or the aeroplane, the following must be completed for all pilots who have not maintained their recency qualifications in accordance with paragraph 705.106(1)(b) of the *Canadian Aviation Regulations* for a period between 90 and 180 days:

(amended 2000/12/01)

(i) a briefing on changes that have occurred to the aeroplane or its operation since the pilot's last flight,

(ii) three take-offs and landings (which may be carried out as part of a PPC where one has come due), and

(iii) a line check of at least two sectors duration.

(16) Regaining Competency Training - After PPC Expiry for Pilots other than Cruise Relief Pilots

(amended 2004/12/01)

(a) Where the PPC has expired for less than 6 months the following must be completed to regain type qualification:

(i) all the requirements specified in subsection 725.124(15) above; and

(ii) any recurrent training, including a PPC, that may come due during the absence from flying duties;

(b) Where the PPC has expired from between 6 and 24 months the following must be completed to regain type qualification:

- (i) all the requirements of paragraph 725.124(16)(a) above; and
- (ii) a technical ground training course consisting of an aeroplane system review and FTD training (where applicable);

(c) Where the PPC has expired for a period greater than 24 months a complete initial aeroplane type training course shall be carried out (subsection 705.113(6) of the *Canadian Aviation Regulations*).

(17) Upgrade Training and Checking

(a) Upgrade training and checking for pilots who are qualified as a second-in-command on that aeroplane type shall include the following:

- (i) successfully complete simulator manoeuvres training, and training as a pilot-in-command in all areas of aeroplane handling that are specific to the pilot-in-command seat position;
- (ii) command and decision making;
- (iii) successfully complete specialized operations qualification training; (e.g. lower take-off limits, etc.)
- (iv) successfully complete on that type of aeroplane the initial pilot proficiency check outlined in Schedule I or Schedule II, conducted by a Transport Canada - Civil Aviation inspector or an approved check pilot; and
- (v) initial line indoctrination for a pilot in command, followed by a line check.

(b) Upgrade training and checking for pilots whose PPC as second-in-command on that aeroplane type has expired within the previous 24 months shall consist of completion of regaining competency requirements specified in paragraphs 725.124(16)(a) or (b), as applicable, as well as the requirements of paragraph 725.124(17)(a) above.

(c) Pilots who have not held a valid PPC on that aeroplane type as second-in-command for a period greater than 24 months shall be given a complete initial aeroplane type training course as well as the requirements of paragraph 725.124(17)(a) above.

(18) Right Seat Conversion Training

(a) For a left seat-qualified pilot to operate an aeroplane from the right seat, except when providing relief during the cruise portion of flight, the pilot shall
(amended 2000/12/01)

(i) be qualified as captain or pilot-in-command and be current on the aeroplane type for left seat duties,
(amended 2000/12/01)

(ii) receive sufficient technical ground training on right seat duties,

(iii) have, in the initial training received after January 1, 2001, sufficient flight or FFS training to enable a Company Check Pilot, air operator aeroplane type Chief Pilot, or an aeroplane type Training Pilot to certify the competency of the pilot to carry out pilot duties from the right seat, and
(amended 2000/12/01)

(iv) every 12 months, complete two segments in the right seat, one as the pilot-flying and one as the pilot-not-flying;
(amended 2000/12/01)

(b) The initial training specified in subparagraph 725.124(18)(a)(iii) shall include at least the following items:
(amended 2000/12/01)

(i) a normal take-off,

(ii) an instrument approach and landing, and

(iii) a take-off with an engine failure above V1 for FFS training or a simulated engine failure at a safe altitude for flight training;

(c) If the currency requirements specified in subparagraph 725.124(18)(a)(iv) lapse, then the initial training specified in paragraph 725.124(18)(b) shall be completed in order to regain right seat currency;
(amended 2000/12/01)

(d) A current first officer upgrading to captain on the same aircraft type will be considered to have completed the initial right seat training requirement specified in paragraph 725.124(18)(b).
(amended 2000/12/01)

(19) Cruise Relief Pilot (CRP) Training

(a) Initial and Annual Training

(amended 1998/03/23)

(i) aeroplane technical ground training sufficient to assure that the CRP is knowledgeable with respect to aeroplane systems and all normal, abnormal and emergency procedures (including upset training on initial and every two years thereafter) that would be encountered during the cruise phase of flight;

(amended 2003/06/01)

(ii) flight Simulator training sufficient to assure that the CRP is proficient with respect to all normal, abnormal and emergency procedures (including upset training on initial and every two years thereafter) that would be encountered during the cruise phase of flight, and instrument flight to a Group 1 Instrument Rating Standard;

(amended 2003/06/01)

(iii) operations training sufficient to assure that the CRP is proficient with respect to procedures unique to the airspace that will be flown;

(iv) CRP Pilot Proficiency Check-as per Schedule III; and

(v) line Check (Cruise Relief Pilot) - One sector.

(b) Recurrent Training

(i) aeroplane systems and procedures review;

(ii) flight Simulator training, reviewing cruise flight normal, abnormal and emergency procedures, and instrument flight training if required to renew an IFR;

(iii) CRP Pilot Proficiency Check - Annually and as per Schedule III; and

(iv) line Check (Cruise Relief Pilot) - One sector annually.

(c) Regaining Competency

(i) Where the CRP PPC has expired for less than 12 months, competency shall be regained by completing the CRP recurrent training program;

(ii) Where the PPC has expired from between 12 and 24 months, competency shall be regained by:

(A) completing the CRP recurrent training program; and

(B) completing a technical ground training course consisting of an aeroplane system review and FTD training (where applicable).

(20) Line Oriented Flight Training (LOFT)

The following attributes are considered to be appropriate for the LOFT training session:

- (a) sessions are accomplished on a real-time basis without interruption by the instructor. Strict attention is paid to realism through the duplication of line environmental conditions. Where the route segments for the aeroplane type are inordinately long, the cruise portion of the segment can be broken;
- (b) a line qualified or line familiar captain, first officer and second officer (as applicable) is required for recurrent, upgrade or regaining competency training;
- (c) LOFT training is conducted without the requirement for a passing grade. If deficiencies are identified, further training is provided;
- (d) all training is conducted in Level C or Level D synthetic training devices or a Level A or Level B synthetic training device where it meets the minimum requirement of the LOFT program;
- (e) the flight shall be planned as one would a real line trip. All communication must be conducted in a manner normally found on a line flight. The air operator shall use recognizable company route and airports or if not available similar routes; and
- (f) a LOFT facilitator guide shall be developed which will contain a detailed script of all sequences and scenarios for each LOFT session, instructions for facilitator role playing, adherence to the script, and conformance to realism in briefings and operational conditions.

(20A) Initial and Recurrent Training for Flight Engineer and Second Officer

The training programs are under development and will be available at a later date.

(21) Flight Dispatcher Training**(a) General**

This Standard shall apply to the training of flight dispatchers who will exercise operational control within an approved full co-authority dispatch system.

Flight dispatcher training shall comprise two phases: generic training and specific training.

Flight Dispatcher Generic Training

The generic training consists of the common body of knowledge required by all flight dispatchers. Generic training is not approved by Transport Canada - Civil Aviation. Transport Canada - Civil Aviation shall verify the level of knowledge of flight dispatcher candidates who have completed generic training by administering two examinations: one on the meteorology-related subjects and another on the remaining subjects contained in the *Study and Reference Guide -Flight Dispatchers* (TP 12513E). These examinations shall be closed-book. The pass mark shall be 70%. A candidate that fails a generic exam must allow 14 days to elapse before rewriting the exam.

(amended 1998/03/23)

A flight dispatcher candidate shall pass both generic examinations prior to commencing an air operator specific training. The flight dispatcher candidate shall commence the air operator's initial specific training within 24 months of passing the first generic examination.

(amended 1998/03/23)

Flight Dispatcher Specific Training

The air operator specific training provides training in those subjects that apply specifically to the individual air operator's flight operations and operational control system. The air operator's specific training shall be approved by Transport Canada - Civil Aviation.

Specific training includes the course itself, on-the-job training and cockpit familiarization. All flight dispatcher specific training shall be provided by the air operator that employs the flight dispatcher candidate. Recurrent training shall be given to each flight dispatcher once every 12 months. A competency check shall be performed at the completion of specific training.

(amended 1998/09/01)

The flight dispatcher candidate shall pass both generic examinations prior to commencing on-the-job training at an air operator.

(b) Approval of Specific Training Courses

A copy of the syllabus for each flight dispatcher specific training course shall be submitted to Transport Canada - Civil Aviation by the air operator for approval, and each approved syllabus shall be included in the appropriate Section of the company operations manual or in a separate approved training manual.

Specific training courses shall consist of instruction in at least those subjects listed in this Standard which are applicable to the air operator and shall provide each flight dispatcher candidate with the level of proficiency specified for each applicable subject.

Each specific training syllabus shall specify the time allotted for class review, examinations, and the review of examinations as well as the total time allotted to the delivery of the course.

All course material shall relate to operational control procedures, aeroplane types, and the route structure of the air operator.

(c) Revision of Course Syllabus

Requests for revising a specific training course syllabus or for making significant changes to facilities or equipment shall be submitted to Transport Canada - Civil Aviation for approval. These revisions shall be submitted in such form that the entire page or pages of the existing syllabus can be removed and replaced.

(d) Examinations for Specific Training

An examination shall be given at the end of flight dispatcher specific training. The form and content of this examination shall be left to the discretion of the air operator; however, the examination's relevance to the subject matter specified in the approved course syllabus and its validity as a test of the flight dispatcher candidate's knowledge shall be periodically monitored by and be acceptable to Transport Canada - Civil Aviation.

Air operators shall develop at least two examinations for each specific training course syllabus: one primary examination and the other for any possible re-write.

Close-book examinations shall have a pass mark of 75%, and any open-book examination or quiz shall be corrected to 100%.

(e) Training Records

A training record shall be kept for each flight dispatcher who exercises operational control on behalf of an air operator. This record shall contain information on all the training completed by the flight dispatcher, including the results of Transport Canada - Civil Aviation's generic examinations, copies of all other examinations taken in the previous three years, records of on-the-job training, and all certifications of competency.

Where an air operator employs a flight dispatch organization under contract, the record of training may be located at the flight dispatch organization, but the air operator remains responsible for both the training given and the completeness and accuracy of the record.

(f) Flight Dispatcher Instructors and Check Flight Dispatchers

Refer to 725.124(4), Training Personnel.

(g) On-the-Job Training

(i) On-the-job training shall consist of a specified period of time during which the flight dispatcher candidate will perform the duties of a flight dispatcher under the direct supervision of a fully qualified flight dispatcher who is employed by the air operator. Each air operator shall specify the minimum duration of on-the-job training in its company operations manual or other approved training document, and the conditions of this training shall be arranged so that effective operational control is maintained.

(amended 2000/12/01)

(ii) New air operators who are unable to provide on-the-job training will be given interim approval of their operational control system for up to six months pending inspection and monitoring by Transport Canada.

(amended 2000/12/01)

(h) Cockpit Familiarization Training

In order to provide flight dispatchers and flight dispatcher candidates with practical experience of flight operations and the system of operational control, the air operator shall provide cockpit familiarization training involving an aircraft, route and destination for which the dispatcher is responsible as part of both initial and recurrent training. During this familiarization training, the flight dispatcher shall occupy a jump seat during a revenue flight in an aeroplane type operated by the air operator. The duration of this familiarization training shall be specified in the air operator's flight dispatcher specific training program, which must be submitted to Transport Canada - Civil Aviation for approval. The area of responsibility of the flight dispatcher can be covered over an extended period of time. This requirement does not apply to aeroplanes that are not equipped with a jump seat.

(amended 2006/06/30)

(i) Competency Checks

After completion of on-the-job training, each flight dispatcher shall undergo a competency check administered by a check flight dispatcher. In addition, no later than the first day of the thirteenth month thereafter, each flight dispatcher must undergo an annual competency check. The air operator must also ensure all recurrent training or the approved recurrent training syllabus items listed in the air operator's operations manual, as the case may be, and the cockpit familiarization training are completed during each calendar year.

(amended 2006/06/30)

The competency check shall take place during an operating shift. A shift of eight hours is considered a normal operating shift. An air operator having scheduled shifts longer than eight hours is permitted to complete the competency check during an eight-hour period, provided the competency check includes either the start or termination shift briefing. The competency check shall consist of an evaluation by direct observation of the flight dispatcher's competency, as applicable, in the following elements:

(amended 2006/06/30)

- (i) Basic job skills and knowledge;
- (ii) *Canadian Aviation Regulations*;
- (iii) Air operator operational control policies and procedures;
- (iv) The air operator's manuals;
- (v) Aeroplane performance analysis;
- (vi) Flight planning procedures;
- (vii) Transport Canada - Civil Aviation and the air operator emergency and abnormal procedures through actual observation or simulated through questioning;
- (viii) Knowledge of the latest recurrent training and interim operating directives;
- (ix) The air operator's administrative procedures relating to flight operations;
- (x) Knowledge relating to the interface between operations co-ordination and operational control functions;

- (xi) Ability to prioritise and organize workload;
- (xii) Communications skills and procedures;
- (xiii) Accuracy and thoroughness of work, in particular that related to flight planning and the interpretation of Transport Canada - Civil Aviation and the air operator's fuel policies;
- (xiv) Assessment of alternates and their suitability;
- (xv) Ability to anticipate changes;
- (xvi) Liaison ability with flight crew members and other air operator departments;
- (xvii) Ability to analyze weather, perform weather watch, and understand the effects of weather changes;
- (xviii) Ability to brief flight crew members and other flight dispatchers on operational matters;
- (xix) Ability to use and understand NOTAMs;
- (xx) Ability to contact aeroplanes during the flight watch stage and quickly and accurately forward information to flight crew members;
- (xxi) Ability to plan for abnormal operations, such as gear down, surface contamination, and anti-skid inoperative, etc.; and
- (xxii) Knowledge of ATC procedures, such as flow control, delay programs, and re-routings, etc.

The duration and results of the competency check, together with certification of the flight dispatcher's competency to perform operational control duties shall be recorded on a competency check form, which once completed, shall be included on the flight dispatcher's training record.

Should a flight dispatcher fail a competency check at any time, the air operator shall notify Transport Canada - Civil Aviation, and the individual shall not be allowed to exercise operational control.

(j) Recurrent Training

An air operator's annual recurrent training program shall be approved by Transport Canada and cover those subjects specified in this Standard. The approved program shall, over a three year period, cover all the subjects listed in the standard. Subjects requiring more frequent training than once in a three year period shall be conducted in accordance with applicable requirements. (ie. Aeroplane de-icing procedures.) Dispatchers must satisfactorily complete annual recurrent training as part of the certification validation. In order to maintain the validity of a Flight Dispatchers Certificate, the dispatcher shall complete annual recurrent training and undergo an annual competency check. Annual cockpit familiarization training shall be considered part of the recurrent training program.

(amended 2000/06/01)

(k) Requalification Training

Where a previously qualified flight dispatcher has not actively dispatched with an air operator for a period in excess of 90 days, that flight dispatcher shall pass a competency check prior to returning to work as a flight dispatcher at the same air operator.

Where a previously qualified flight dispatcher has not actively dispatched with an air operator for a period in excess of 12 months, that flight dispatcher shall undergo a course of refresher training that will include recurrent training, any generic training considered appropriate by the air operator, and cockpit familiarization training. Requalification training shall be followed by a successful competency check.

(l) New Dispatch Sector Training

When a flight dispatcher is introduced to a dispatch sector that requires different procedures, that person shall undergo training to acquire the knowledge required for the new area of responsibility. This training shall include at least the following:

- (i) a period of familiarization training on the facilities and aeroplane types being dispatched;
- (ii) monitoring during an operating shift by a qualified flight dispatcher on that sector for each new area of flight dispatch responsibility; and
- (iii) a certification of competency on the flight dispatcher's training record by the person who conducted the monitor.

(m) Aeroplane Type Transition Training

When applying to add a new aeroplane type to its air operator certificate, an air operator with an approved co-authority operational control system shall submit a syllabus for flight dispatcher aeroplane type transition training to Transport Canada - Civil Aviation for approval.

(n) Contracted Flight Dispatch and Flight Watch Services

When an air operator holding a Canadian air operator certificate contracts flight dispatch or flight watch services from an outside organization, the flight dispatchers of the contracted organization shall be trained and certified according to the requirements of this Standard and shall be subject to the same competency checks as if they were direct employees of the contractor. These flight dispatchers shall be familiar with the operating rules (including foreign, where applicable), company operations manual, aeroplane types being dispatched, and standard operating procedures of the contracting air operator.

The competency of each contracted flight dispatcher to exercise operational control on behalf of the contractor shall be certified by an authorized person from the contractor, and the performance of all certified flight dispatchers shall be subject to monitoring and inspection by Transport Canada - Civil Aviation.

(o) Credit for Related Experience

Credit for experience as a civil or military pilot, navigator, air traffic controller, meteorologist, or weather briefer will be given on a case-by-case basis. No credit will be given for generic examinations.

A fully qualified flight dispatcher who changes air operator shall be required to take the approved specific training course of the hiring air operator. Where the scope of the flight operations of the previous air operator is similar to that of the hiring air operator, a flight dispatcher may be given differences training in lieu of initial specific training. The subjects to be covered in this training shall be approved by Transport Canada - Civil Aviation, and the flight dispatcher must pass the air operator's specific training examination. The flight dispatcher shall also undergo a period of on-the-job training, as deemed appropriate by the air operator, under the direct supervision of a fully qualified flight dispatcher. The on-the-job training shall be followed by a successful competency check.

(p) Radio Licence

A flight dispatcher must hold a valid Radio Telephone Operator's Restricted Certificate in order to be certified.

(q) Minimum Age

No person shall be issued a Flight Dispatcher Certificate who is less than 21 years old.

(r) Flight Dispatcher Certification

A flight dispatcher who passes the generic training examinations, completes the specific training required by this Standard, and passes a competency check shall be issued a *Canadian Aviation Document* called a *Flight Dispatcher Certificate* in such form as shall be set out and supplied by Transport Canada - Civil Aviation.

A *Flight Dispatcher Certificate* shall be issued or remain valid only when:

- (i) the flight dispatcher has passed, in the case of initial issue, the Transport Canada - Civil Aviation generic examinations; completed the air operator's approved initial or recurrent specific training program and passed all associated examinations; and passed a competency check within the previous 12 months, and
- (ii) the flight dispatcher continues to be employed by the air operator named on the *Flight Dispatcher Certificate*.

The *Flight Dispatcher Certificate* shall be signed and issued by an authorized person appointed by the Minister after it has been verified that the candidate has met all the requirements for issuance of this document.

(s) Flight Dispatcher Specific Training - Required Content

The subjects listed below, as applicable, shall be covered to the proficiency level indicated. The proficiency values are defined as follows:

- "1" denotes a basic knowledge of the subject;
- "2" denotes an understanding of the principle;
- "3" denotes knowledge of the subject and the ability to apply it practically;

“4” denotes a thorough knowledge of the subject and the ability to apply it with speed and accuracy; and

“5” denotes extensive knowledge of the subject and the ability to apply procedures derived from it with judgement in the light of circumstances.

STANDARD FORMATION FOR FLIGHT DISPATCHER SPECIFIC TRAINING - REQUIRED CONTENT

	Subject	PROFICIENCY LEVEL FOR:	
		Initial	Recurrent
1.0	Air Law		
1.1	Canadian Aviation Regulations	4	
1.2	Commercial Air Service Standards for Airline Operations	4	
1.3	FAR's	3	
1.4	Foreign Regulations (if applicable)	4	4
2.0	Provisions of Air Operator Certificate		
2.1	Operations Specifications	4	4
3.0	Publications		
3.1	Canadian AIP	5	5
3.2	Canada Flight Supplement		5
3.3	Flight Information Publications	5	5
3.4	MANOPS	5	5
3.5	Foreign AIP's	3	3
3.6	MMEL/MEL	5	
3.7	Designated Airspace Handbook		3
3.8	Foreign Operations Specifications	5	5
3.9	Air Almanac (Sunrise, Sunset)	3	
4.0	Company Operations Manual		
4.1	C.O.M. Content and Role	3	3
5.0	Theory of Meteorology		

	Subject	PROFICIENCY LEVEL FOR:	
		Initial	Recurrent
5.1	Low Level Wind Shear/Microbursts		5
5.2	Thunderstorms	5	
5.3	Tropical Weather	5	
5.4	Desert Weather	5	
5.5	Volcanic Activity	5	5
6.0	Meteorological Information		
6.1	Satellite Imagery	4	
6.2	Radar Meteorology	4	
6.3	Drawing a Weather Map		4
6.4	Weather Nomenclature and Terms	5	
7.0	Applied Meteorology Dispatch Applications		
7.1	Briefing Flight Crews	4	
7.2	Destination and Alternate Weather Minima	4	4
8.0	Facilities		
8.1	Air Operator's Facilities	4	4
8.2	Security	3	3
8.3	Aerodrome Services	3	
8.4	Ground Visual Aids		3
9.0	Communications		
9.1	Language Terminology		5
9.2	Communications Networks	5	
9.3	Emergency Frequency Procedures		5
10.0	Aeroplanes		
10.1	Hydraulics	3	
10.2	Electrics	3	
10.3	A/C and Pressurization	3	
10.4	Emergency Equipment	3	

	Subject	PROFICIENCY LEVEL FOR:	
		Initial	Recurrent
10.5	De-Icing/Anti-icing Systems	3	
10.6	Fire Detection Systems	3	
10.7	Fuel Systems	3	
10.8	Weight and Balance Control Procedures	4	
10.9	Avionics	3	
10.10	Aeroplane Performance (including wet, dry, and contaminated runways)	5	5
10.11	Aeroplane Performance Enroute	5	5
10.12	Aeroplane Type Transition Training (per type)		4
11.0	Air Navigation		
11.1	Navigation - Short-Range Flights		4
11.2	Navigation - Long-Range Flights		4
11.3	Precision Instrument Approach Procedures	3	
11.4	Non-Precision Instrument Procedures	3	
12.0	ATC Procedures		
12.1	ATC Responsibilities		5
12.2	Separation Procedures		4
12.3	Special Procedures	4	
12.4	Take-off Procedures	4	4
12.5	Departure/SID		4
12.6	Arrivals/STAR/Profile Descent	4	
12.7	Landing Procedures	4	4
12.8	Flow Management	4	
12.9	Automatic Dependent Surveillance (ADS)	3	
13.0	Dispatch Procedures		
13.1	Airworthiness and Maintenance	4	
13.2	MEL Procedures	5	5
13.3	Weather Analysis	4	4

	Subject	PROFICIENCY LEVEL FOR:	
		Initial	Recurrent
13.4	NOTAM Procedures	4	
13.5	Operational Flight Plan	5	5
13.6	Release Procedures	5	
13.7	Re-Release Procedures	5	5
13.8	ETOPS	5	5
13.9	Briefing Elements	5	5
13.10	Flight Watch Procedures	5	5
13.11	Diversion Operations	5	5
13.12	Shift Turnover	5	5
13.13	Deployed Operations (off-line)	5	5
13.14	Computer Systems	5	
13.15	Abnormal Operations (gear down, ferry, etc.)	5	5
13.16	Aeroplane Surface Contamination	5	5
13.17	Dangerous Goods	4	4
13.18	Economic Advantages/Disadvantages	5	
13.19	Dispatcher Authority and Responsibility	5	
13.20	Use of Hand-Held Computer (e.g., CR or E6B)	4	4
13.21	Human Factors (CRM, DRM)	4	
14.0	Emergency Procedures		
14.1	Pilot Functions	3	
14.2	Flight Dispatch Functions	5	5
14.3	Air Operator's Emergency Plan	5	5
14.4	Communications	5	5
14.5	ATC Procedures	5	5
14.6	ERS Procedures	5	5
14.7	Search and Rescue	4	
14.8	Security Measures on the Ground	5	5
14.9	Security Measures in Flight	5	5

(f) Extended Twin-Engine Operations (ETOPS) for Flight Dispatchers
(amended 2007/06/30)

Flight dispatcher practices and procedures for ETOPS operations shall be standardized in the air operator's training program/syllabus, with the exception of the concept and implications of ETOPS operation in a benign area of operation which shall only be defined in the air operator's operations manual.

Only ETOPS qualified flight dispatchers shall be designated as training and/or check flight dispatchers for ETOPS operations.

Initial and recurrent annual ETOPS training shall be completed by each flight dispatcher that is required to prepare an operational flight plan and/or conduct flight watch for a flight intended to be operated in an actual or simulated ETOPS environment.

(1) Initial training for flight dispatchers

The air operator's flight dispatcher training program with respect to ETOPS operations shall include the initial ETOPS training to be provided for each flight dispatcher in the following areas:

Initial Ground training

(A) introduction to regulations, standards and associated operational approvals that are applicable to the air operator's ETOPS operation;

(B) familiarization with the AFM Type Design approval for ETOPS;

(C) familiarization with the air operator's ETOPS routes and areas of operation;

(D) familiarization with the location of adequate airports and the requirements permitting them to be designated as ETOPS alternate airports;

(E) review of the air operator's ETOPS procedures such as:

(I) dispatch procedures including the applicability of MEL items sensitive to ETOPS operations prior to the aeroplane being dispatched;

(II) navigational procedures required in the applicable ETOPS areas of operation;

(III) communication procedures required in the applicable ETOPS areas of operation;

(IV) procedures to evaluate the aeroplane's system capability prior to entering an ETOPS area of operation;

(V) diversion procedures and associated operational restrictions, if applicable and required, in the event of an ETOPS significant system failure in any phase of flight.

(VI) procedures to be followed during any phase of flight in the event that there is a change in conditions at designated ETOPS alternate airports that would preclude a safe approach and landing;

(VII) fuel requirements and procedures to be followed during the flight watch portion of the flight, including a system to provide the dispatcher with a fuel report from the flight crew prior to entering the ETOPS segment of flight;

(F) performance such as:

(I) one engine inoperative performance data within the range of altitudes and weight configuration at which a diversion could occur;

(II) flight planning and plotting including all contingencies;

(III) flight performance progress monitoring; and

(IV) the effects of solar flare activity, cosmic radiation and HF propagation; and

(G) fuel and oil requirements including:

(I) Minimum requirements;

(II) Contingency fuel reserve; and

(III) Critical fuel scenario.

If an element of the initial ETOPS ground training listed above is already covered in another part of the air operator's training program, then the air operator may be credited for that training element provided there is a cross reference statement in the air operator's training program and that the element is trained for in the context of ETOPS operations.

Examination

Once the initial ground training has been completed, a comprehensive examination as per the requirements of subparagraph 725.124(1)(b)(iii) shall be administered to each flight dispatcher on the subjects specific to ETOPS; and

Initial Competency Checks

Upon successful completion of a comprehensive examination required in subparagraph 725.124(21)(t)(i) *Examination*, each flight dispatcher shall successfully complete a comprehensive competency check as required by paragraph 725.124(21)(i) for a flight that is operating in an actual ETOPS environment.

Air operators unable to provide an actual ETOPS flight may use simulated flights for temporary approval of their operational control system with regards to ETOPS operation. Within six months after the beginning of actual ETOPS operation, an inspection and monitoring will be required in order to grant unrestricted approval.

(ii) Recurrent training for flight dispatchers

The air operator's flight dispatcher training program with respect to ETOPS shall include the recurrent ETOPS training to be provided for each flight dispatcher in the following areas every 12 months:

Recurrent ground training

(A) Review of new regulations, standards and operational approvals, if applicable, that are applicable to the air operator's ETOPS operation (if applicable);

(B) Review of new AFM Type Design approval for ETOPS (if applicable);

(C) Review of new ETOPS routes and areas of operation used in the ETOPS area of operations (if applicable);

(D) Summary review of the air operator's procedures listed in subclauses 725.124(21)(t)(i)(E)(I) to (VII);

(E) Review of the performance and fuel management requirements and procedures; and

(F) Review, if applicable, of any ETOPS operational occurrences that have been reported in the air operator's reporting system or any other system, where there would be a benefit for each flight dispatcher to learn from these occurrences.

Recurrent Competency Checks

(A) Subject to clause 725.124(21)(t)(ii)(B) with regards to recurrent competency checks, each flight dispatcher shall complete an ETOPS recurrent competency check every 12 months for a flight operating in an actual ETOPS environment; and

(B) A flight dispatcher not having prepared an operational flight plan and conducted flight watch of a flight intended to be operated in an ETOPS environment, for a period of 24 months, shall complete the initial ETOPS training requirements for flight dispatchers.

(22) Flight Follower Training

Persons assigned the duties of the flight follower, permitted when utilizing a Type C operational control system, shall receive initial training in at least the following:

(amended 1998/03/23)

- (a) company indoctrination;
- (b) applicable regulations and standards;
- (c) company operations manual as applicable;
- (d) providing meteorological information without analysis or interpretation;
- (e) procedures in the event of an emergency; and
- (f) incident/accident reporting.

(23) Aeroplane Surface Contamination Training

An approved surface contamination initial and annual training program is required for all operations personnel to ensure they are aware of hazards and procedures for ice, frost and snow critical contamination on aircraft. The training program shall include:

(amended 1998/03/23)

- (a) responsibility of pilot-in-command and other operations personnel;
- (b) regulations related to operations in icing conditions;
- (c) weather conducive to ice, frost and snow contamination;
- (d) inspection before flight and removal of contamination;
- (e) in-flight icing recognition; and
- (f) hazards related to critical surface contamination of ice, frost and snow.

(24) Minimum Equipment List (MEL) Training

When a Minimum Equipment List (MEL) has been approved for use on an aeroplane type, the air operator shall provide the following initial and recurrent training to flight crew members, flight attendants, maintenance personnel and flight dispatchers, as applicable:

(amended 2004/12/01)

- (a) initial training for maintenance personnel shall include instruction on those sections of the Maintenance Control Manual which address the MEL, placarding of inoperative equipment, maintenance release of an aeroplane, dispatching, and any other MEL related procedures;

(amended 2004/12/01)

(b) initial training for flight crew members, flight attendants and flight dispatchers shall include instruction on the purpose and use of an MEL, air operator MEL procedures, elementary work as applicable, and responsibility of the pilot-in-command;
(amended 2004/12/01)

(c) recurrent training shall be conducted when required to ensure air operator personnel are aware of any changes to the MEL or MEL procedures.

(25) Transportation of Dangerous Goods

Crew members' training on transportation of dangerous goods shall be in accordance with the *Transportation of Dangerous Goods Regulations*.

(26) Lower than Standard Take-Off Weather Minima

Reported Visibility - RVR 1200 Feet (1/4 Mile), RVR 600 Feet

Training is required for the pilot-in-command only. If the air operator authorizes, in the operations manual, the second-in-command to conduct take-offs in lower than standard weather minima, the second-in-command shall undergo the same training as the pilot-in-command.

(a) Ground Training

- (i) take-off alternate requirements;
- (ii) pilot-in-command minimum experience;
- (iii) pilot-in-command responsibility for visibility and obstacle clearance requirements;
- (iv) minimum aeroplane and runway equipment requirements; and
- (v) procedures to ensure compliance with performance limitations.

(b) Synthetic Training Device Training

- (i) required for air operators using RVR 600 feet; and
- (ii) required for air operators using RVR 1200 feet without certified take-off performance.

(c) Initial and Recurrent Training to be conducted every six months or as specified in an approved advanced qualification program

(amended 2006/06/30)

- (i) a minimum of one completed take-off at RVR 600 or 1200 feet (as applicable) with a failure of the critical engine at V1; and
- (ii) one rejected take-off at RVR 600 or 1200 feet (as applicable) immediately prior to V1.

(27) Area Navigation Systems (RNAV)

(amended 1998/09/01)

(a) General Training

(i) To qualify for use of RNAV systems on IFR operations, an air operator shall have an approved flight crew member training and qualifications program for use of the system. Flight crew shall have completed the appropriate training and have completed an in-flight check or an equivalent check in an approved synthetic training device. This qualification check shall be conducted by an approved check pilot.

(amended 2004/12/01)

(ii) Training shall be in the following areas:

(A) pre-flight;

(B) normal operation of the system;

(C) procedures for manually updating system;

(D) methods of monitoring and cross checking system;

(E) operation in area of compass unreliability;

(F) malfunction procedures;

(G) terminal procedures;

(H) waypoint symbology, plotting procedures, record keeping duties/practices;

(I) time keeping procedures; and

(amended 2003/03/01)

(J) post-flight.

(amended 2003/03/01)

(iii) To qualify for approval to conduct GPS approaches in IFR, an air operator shall have a flight crew training program approved by the Minister. Flight crew shall have completed the appropriate training and have completed an in-flight check, or an equivalent check in a synthetic training device approved by the Minister prior to conducting GPS approaches. This qualification check shall be conducted by an approved check pilot.

(iv) Where pilots are required to use more than one type of GPS for approach, the training program shall address the differences between the units, unless the units have been determined by the Minister to be sufficiently similar.

(v) Ground training shall include “hands on” training using a desk top simulator, a computer based simulation of the unit to be used, a static in-aircraft unit, or other ground training devices acceptable to the Minister.

(b) Ground Training - Non-Integrated Receivers (Panel Mount GPS Receivers)

An air operator shall ensure that the training program candidates are trained to proficiency in each of the elements associated with the following areas:

(i) Knowledge with the respect to the following:

(A) the GPS system, including:

- (I) GPS system components and aircraft equipment;
- (II) the composition of satellite constellation;
- (III) the minimum number of satellites required for 2-D and 3-D navigation;
- (IV) the basic concept of satellite ranging;
- (V) factors affecting the accuracy of GPS signals;
- (VI) the World Geodetic Survey 84 (WGS 84) datum and the effect of using any other datum;

(B) human factors applicable to the use of GPS and how errors may be reduced or eliminated;

(C) company standard operating procedures for using GPS units; and

(D) procedures for reporting GPS problems and database errors.

(ii) Ability to perform the following operational tasks:

(A) select appropriate operational modes;

(B) recall categories of information contained in the database;

(C) predict RAIM availability;

(D) enter and verify user defined waypoints;

(E) recall and verify database waypoints;

(F) interpret typical GPS navigational displays including latitude/longitude, distance and bearing to waypoint, course deviation indication (CDI), desired track (DTK), track made good (TMG), actual track (TK), cross track error and any other information appropriate for the equipment used;

(G) intercept and maintain GPS defined tracks;

(H) determine navigation information appropriate for the conduct of the flight including ground speed (GS), estimated time of arrival (ETA) for next waypoint and destination;

(I) recognition of waypoint passage;

- (J) use of 'direct to' function;
 - (K) link enroute portion of GPS flight plan to approach;
 - (L) conduct SIDs, STARs, terminal area procedures and holds;
 - (M) retrieve, verify and conduct GPS stand alone approaches; and
 - (N) conduct GPS missed approaches.
- (iii) Ability to conduct the following operational and serviceability checks:
- (A) database currency and area of operation;
 - (B) receiver serviceability;
 - (C) RAIM status;
 - (D) CDI sensitivity;
 - (E) position indication; and
 - (F) number of satellites acquired and, if available, satellite position information.
- (iv) Ability to recognize and take appropriate action for all GPS warnings and messages including, where applicable:
- (A) "loss of RAIM"
 - (B) "2D navigation"
 - (C) "In Dead Reckoning Mode"
 - (D) "database out of date"
 - (E) "GPS fail"
 - (F) "barometric input fail"
 - (G) "power/battery low" or "fail"
 - (H) "parallel offset on"; and
 - (I) "satellite fail".

(c) Ground Training - Integrated Receivers (Flight Management Systems)

An air operator shall ensure that the training program candidates are trained to proficiency in each of the elements associated with the following areas:

- (i) Knowledge with the respect to the following:
 - (A) the GPS system and theory of operation, including:
 - (I) GPS system components and aircraft equipment;
 - (II) the composition of satellite constellation;

- (III) the minimum number of satellites required for 2-D and 3-D navigation;
- (IV) the basic concept of satellite ranging;
- (V) factors affecting the accuracy of GPS signals;
- (VI) the WGS84 datum and the effect of using any other datum; and
- (B) human factors applicable to the use of GPS and how errors may be reduced or eliminated (i.e. maintaining situational awareness); and
- (ii) Ability to perform the following operational tasks:
 - (A) predict RAIM availability;
 - (B) link enroute portion of GPS flight plan to approach;
 - (C) conduct GPS stand alone approaches; and
 - (D) conduct GPS missed approaches.
- (iii) Ability to conduct the following operational and serviceability checks:
 - (A) RAIM status;
 - (B) CDI sensitivity; and
 - (C) number of satellites acquired and, if available, satellite position information.
- (iv) Ability to recognize and take appropriate action for all GPS warnings and messages including, where applicable:
 - (A) “loss of RAIM”;
 - (B) “2D navigation”;
 - (C) “GPS fail”;
 - (D) “barometric input fail”; and
 - (E) “satellite fail”.

(d) Flight Training

- (i) Pilots shall complete flight training in the use of GPS for approach and other associated duties for each crew position they are authorized to occupy. Flight training may be completed in an aircraft, or in a level A or higher simulator that is equipped with the same model of GPS receiver (or a model determined by the Minister to be sufficiently similar) that is installed in company aircraft.
 - (ii) Flight training shall be conducted by a designated training pilot who has completed the company ground training program approved by the Minister, and demonstrated proficiency in the use of the model of GPS (or a model determined by the Minister to be sufficiently similar) to an approved check pilot.
- (amended 2006/06/30)

(28) Transportability of a Pilot Proficiency Check - Training Required

Transportability of Pilot Proficiency Checks from one air operator to another is permitted subject to the hiring air operator providing the following training which shall be specified in the approved operations/training manual:

- (a) company indoctrination;
- (b) pilot ground and emergency procedures training on each type of aeroplane the pilot is assigned, sufficient to cover the air operator procedures and equipment differences;
- (c) standard operating procedures review;
- (d) sufficient line indoctrination to allow the pilot to become familiar with the air operator routes and operational procedures. In no case shall this be less than two sectors over typical route segments that the air operator flies;
(amended 1998/03/23)
- (e) completion of a line check; and
(amended 1998/03/23)
- (f) the hiring air operator records the PPC validity and expiration date in company records.
(amended 1998/03/23)

(28A) Hire of Type Qualified Pilots(amended 1998/03/23)

- (a) In this standard, “equivalent qualification” means a qualification achieved under an approved Transport Canada course.
- (b) An air operator may hire a pilot holding a Canadian type qualification or foreign equivalent qualification, with no PPC on type in accordance with Part VII of the *Canadian Aviation Regulations*, and shall ensure that, as part of the initial training:
 - (i) the candidate last check on the aeroplane type was conducted on a synthetic flight training device;
 - (ii) the following is part of the training:
 - (A) company indoctrination;
 - (B) pilot ground and emergency procedures training on each type of aeroplane the pilot is assigned to, sufficient to cover the air operator procedures and equipment differences;
 - (C) standard operating procedures review;
 - (D) training in synthetic flight training device or flight training sufficient to pass a PPC; and
 - (E) sufficient line indoctrination to allow the pilot to become familiar with the air operator routes and operational procedures. In no case shall this be less than two sectors over typical route segments that the air operator flies; and

(iii) the candidate pass the following checks:

- (A) completion of a PPC; and
- (B) completion of a line check.

(29) High Altitude Training

High Altitude training is required for all flight crew members operating aeroplanes above 13,000 feet ASL before first assignment on a pressurized aeroplane and every three years thereafter.

(a) physiological phenomena in a low pressure environment, including:

- (i) respiration;
- (ii) hypoxia;
- (iii) duration of consciousness at altitude without supplemental oxygen;
- (iv) gas expansion and gas bubble formation.

(b) other factors associated with rapid loss of pressurization including:

- (i) most likely causes;
- (ii) noise;
- (iii) cabin temperature change;
- (iv) cabin fogging;
- (v) effects on objects located near the point of fuselage failure;
- (vi) actions of crew members immediately following the event and the likely resultant attitude.

(30) Survival Training

(amended 1998/03/23)

Training for all crew members shall include the following:

(a) Initial Training (New Hire with Company)

(amended 1998/03/23)

- (i) List the types of survival situations crew members could encounter as a result of an evacuation, including wilderness, arctic, sea, desert or jungle survival, as appropriate to the air operator's operation,
- (ii) Describe the search-and-rescue systems, their scope of operation, and how they are able to locate downed aircraft,

(iii) Identify post-crash procedures to increase survivability and explain their importance in each of the survival situations using basic survival concepts, including the following:

- (A) survival first aid,
- (B) survival priorities,
- (C) hazards inherent in different environments,
- (D) survival skills for different environments based on aircraft and equipment and supplies carried,
- (E) the contents of any survival equipment kit carried, and
- (F) signalling and recovery techniques,

(iv) Identify onboard equipment and supplies that crew members could remove from the aircraft after an evacuation in order to enhance survivability.

(b) Annual Training

(amended 1998/03/23)

Annual training shall include the requirements set out in subparagraphs (1)(a)(iii) and (1)(a)(iv) of the Initial Training section above.

(31) Aeroplane Servicing and Ground Handling Training for Pilots

Initial and annual training for pilots shall include the following where applicable:

(amended 2006/06/30)

(a) fuelling procedures:

- (i) types of fuel, oil and fluids used in the aeroplane;
- (ii) correct fuelling procedures;
- (iii) procedures for checking fuel, oil and fluids and proper securing of caps;

(b) use of tow bars and maximum nose wheel deflection when towing;

(c) seasonal use of the parking brake;

(d) installation of protective covers on the aeroplane;

(e) procedures for operating in cold weather such as:

- (i) moving the aeroplane out of a warm hangar when precipitation is present;
- (ii) procedures for applying de-icing and anti-icing fluids for the aeroplane type including critical flight controls post application inspections;
- (iii) engine and cabin pre-heating procedures, including proper use of related equipment.

(32) Line Indoctrination Training for Flight Crew Members other than Cruise Relief Pilots

(amended 2004/12/01)

Line indoctrination shall be conducted over parts of the air operator's route structure which are typical of those over which the flight crew will be expected to fly.

The following areas, as applicable, shall be covered during line indoctrination training and noted in records as having been completed:

(a) Command of the Aeroplane

- (i) crew management and discipline;
- (ii) responsibilities of the pilot-in-command and other flight crew members; and
- (iii) responsibilities of the cabin crew.

(b) Aeroplane and Equipment

- (i) MEL policy and procedures;
- (ii) Certificate of Airworthiness and other aeroplane documentation;
- (iii) deferred defects;
- (iv) maintenance release;
- (v) manuals and log books;
- (vi) Flight Data Recorder and Cockpit Voice Recorder;
- (vii) emergency exits - number, access, lighting & marking;
- (viii) fire extinguishers;
- (ix) fire axe; and
- (x) oxygen and first aid equipment, and survival equipment.

(c) Dispatch

- (i) personnel, hours of operation, operational control; and
- (ii) company fuel policy.

(d) Aeroplane Servicing and Ramp Safety

- (i) fuelling procedures;
- (ii) load security;
- (iii) ground equipment & handling;

- (iv) air operator's aeroplane de-icing policy and procedures; and
- (v) aeroplane parking.
- (e) Reporting for Duty
- (f) License Requirements
- (g) Aeroplane Library
- (h) Duty Day Limitations and Rest Facilities
- (i) Pre-flight Safety and Crew Briefings
- (j) Ramp Push Back and Starting Engines
- (k) After Start Checks
- (l) Pre-flight Checks and securing cabin
- (m) Rejected Take-off and Brake Cooling Chart
- (n) Departure Sequence
 - (i) lookout; and
 - (ii) after take-off checks.
- (o) Climb Procedures
- (p) Cruise
 - (i) fuel management and checks; and
 - (ii) enroute diversion.
- (q) Approach Procedures
 - (i) organization and briefing of approach;
 - (ii) descent; and
 - (iii) pre-landing check and cabin security.
- (r) Landing and Taxiing
 - (i) contaminated runway operations; and
 - (ii) after landing checks.
- (s) Shutdown
- (t) Flight and Maintenance Logs and Records
- (u) Defect Recording & Clearing

(v) Emergency Procedures

- (i) Hi-jack bomb threat procedures;
- (ii) aeroplane evacuation;
- (iii) airport emergency services; and
- (iv) engine inoperative procedures.

(33) Line Indoctrination for Flight Crew Members other than Cruise Relief Pilots - Sectors/Hours Requirements
(amended 2004/12/01)

(a) General

- (i) During line indoctrination, a flight crew member shall be given the minimum flight times and sectors in accordance with this subsection, while performing the duties appropriate to the crew station.
- (ii) Each pilot shall perform or show knowledge of, as applicable, a mandatory list of operating manoeuvres and procedures as detailed in subsection 725.124(32).
- (iii) Sectors/hours acquired during proving or ferry flights may be counted towards this requirement. The required number of flying hours and sectors apply to the pilot-in-command, the second-in-command, the second officer and the flight engineer.
(amended 1998/09/01)

(b) Definitions

- (i) “Group of aeroplanes”, for the purpose of line indoctrination, means reciprocating engined, turbo-propeller engined or turbo-jet engined aeroplanes.
- (ii) “Sector”, for the purpose of line indoctrination, means a flight composed of a take-off, departure, arrival and landing including at least a 50 NM enroute segment, except that, for the line indoctrination of a cruise relief pilot, it means only the minimum 50 NM enroute segment of the flight.
(amended 1998/03/23)

(c) Initial and Transition Line Indoctrination - Application

- (i) Initial line indoctrination is required for crew members who have not qualified and served in the same capacity on the same group of aeroplanes.
- (ii) Transition line indoctrination is authorized for crew members who have qualified and served in the same capacity on the same group of aeroplanes.

(d) Initial Line Indoctrination - Requirements

- (i) initial line indoctrination shall be conducted under the supervision of a training pilot;
- (ii) during initial line indoctrination, the pilot-in-command and second-in-command shall perform their duties in their respective position, with the training pilot occupying the opposite pilot operating position;

(iii) Sectors Requirement

(amended 1998/09/01)

Initial line indoctrination requires:

- (A) the pilot to complete 4 mandatory sectors, 2 sectors of which to be performed as pilot flying and 2 sectors as pilot not flying;
- (B) second officers or flight engineers to complete 2 sectors;

(iv) Flight Time Requirements**(A) Aeroplanes with Reciprocating Engines**

- (I) 15 hours; and
- (II) after completing the 4 mandatory sectors, the remaining time may be reduced by 1 hour for each additional sector flown to a maximum reduction of 7.5 hours;

(B) Aeroplanes with Turbo-propeller Engines

- (I) 20 hours; and
- (II) after completing the 4 mandatory sectors, the remaining time may be reduced by 1 hour for each additional sector flown to a maximum reduction of 10 hours;

(C) Aeroplanes with Turbo-jet Engines

- (I) 25 hours; and
- (II) no reduction of the original time requirement shall be permitted.

(e) Transition Line Indoctrination - Requirements

- (i) transition line indoctrination shall be conducted under the supervision of a training pilot;
- (ii) during transition line indoctrination, the pilot-in-command and second-in-command shall perform their duties in their respective position. Where the transitioning pilot has completed at least 2 sectors as pilot flying and has satisfactorily demonstrated to the training pilot that he or she is qualified to perform the duties of the position, the training pilot may occupy the jump seat;

(iii) Sectors Requirement

(amended 1998/09/01)

Transition line indoctrination requires:

- (A) the pilot to complete 4 mandatory sectors, 2 sectors of which to be performed as pilot flying and 2 sectors as pilot not flying, or 3 sectors as pilot flying and 1 sector as pilot not flying;
- (B) the second officer or flight engineer to complete 2 sectors;

(iv) Flight Time Requirements**(A) Aeroplanes with Reciprocating Engines**

- (I) 10 hours; and
- (II) after completing the 4 mandatory sectors, the remaining time may be reduced by 1 hour for each additional sector flown to a maximum reduction of 5 hours;

(B) Aeroplanes with Turbo-propeller Engines

- (I) 12 hours; and
- (II) after completing the 4 mandatory sectors, the remaining time may be reduced by 1 hour for each additional sector flown to a maximum reduction of 6 hours;

(C) Aeroplanes With Turbo-jet Engines

- (I) 25 hours; and
- (II) after completing the 4 mandatory sectors, the remaining time may be reduced by 1 hour for each additional sector flown to a maximum reduction of 12.5 hours.

(34) Line Indoctrination Training for Flight Attendants**(a) Groupings**

(amended 2003/06/01)

- (i) Line indoctrination shall be completed within ninety (90) days following the completion of the air operator's initial training on each aeroplane type that a person will be assigned a crew member station within the following groupings:

(amended 2003/06/01)

- * Turbo-jet aeroplanes; or
- * Pressurized propeller driven aeroplanes; or
- * Unpressurized propeller driven aeroplanes.

(ii) Where an air operator operates and a flight attendant is assigned to duty on more than one type of aeroplane in a grouping, line indoctrination may be completed on any one type in that grouping.

(amended 2003/06/01)

(b) Record of Training

(amended 2003/06/01)

A record of training shall be kept for each trainee and shall be signed by the instructor certifying that line indoctrination has been completed. The record shall include: aeroplane type, date, flight number and specify individual or group format.

(c) Requirements

(amended 2003/06/01)

A flight attendant trainee shall complete individual line indoctrination training on a revenue flight in accordance with the requirements set out in subparagraph (i), or shall act as an observer during a group line indoctrination flight in accordance with the requirements set out in subparagraph (ii).

(i) Individual Line Indoctrination Training

(amended 2003/06/01)

A uniformed flight attendant trainee shall:

(amended 2003/06/01)

(A) be assigned to two revenue flights with passengers onboard, each composed of a take-off and landing and at least 30 minutes at the normal cruising altitude for the aeroplane;

(amended 2003/06/01)

(B) be assigned a flight attendant station and perform the duties of a flight attendant under the supervision of a qualified flight attendant;

(amended 2003/06/01)

(C) be in addition to the number of required crew members for the operation of the flight and the aeroplane type with the ratio of trainees to qualified flight attendants not greater than one to one; and

(amended 2003/06/01)

(D) participate in:

(amended 2003/06/01)

(I) reporting for duty;

(amended 2003/06/01)

(II) pre-flight crew briefings;

(amended 2003/06/01)

(III) pre-flight safety and emergency equipment checks;
(amended 2003/06/01)

(IV) passenger boarding procedures;
(amended 2003/06/01)

(V) door closing and, if applicable, associated slide arming procedures;
(amended 2003/06/01)

(VI) pre-flight passenger safety briefings/demonstrations;
(amended 2003/06/01)

(VII) pre-flight and pre-landing warnings and checks, and securing of cabins and galleys;
(amended 2003/06/01)

(VIII) silent review;
(amended 2003/06/01)

(IX) post take-off procedures;
(amended 2003/06/01)

(X) in-flight procedures pertaining to safety;
(amended 2003/06/01)

(XI) cabin unserviceabilities reporting/recording; and
(amended 2003/06/01)

(XII) a debriefing immediately following completion of line indoctrination;
(amended 2003/06/01)

(ii) Group Line Indoctrination Training

(amended 2003/06/01)

(A) A flight attendant trainee shall act as an observer during a group line indoctrination flight when the flight is conducted under the following conditions:
(amended 2003/06/01)

(I) is non-revenue;
(amended 2003/06/01)

(II) is composed of a take-off and landing, including a period of at least one hour at the normal cruising altitude for the aeroplane;
(amended 2003/06/01)

(III) does not concurrently include any flight crew member training, or carry any persons or personnel that are not essential to the exercise;
(amended 2003/06/01)

(IV) operated with qualified flight attendants assigned to each flight attendant station, but not less than the minimum number of qualified flight attendants required for the operation of the flight and the aeroplane type, and a flight attendant supervisor is assigned to each cabin in the aeroplane where trainees are seated;

(amended 2003/06/01)

(V) includes degrees of simulated in-flight turbulence where such conditions are not encountered during the normal course of the operation and includes the flight attendant procedures associated with turbulence;

(amended 2003/06/01)

(VI) includes a “rapid descent” of several thousand feet;

(amended 2003/06/01)

(VII) includes a missed approach / rejected landing;

(amended 2003/06/01)

(VIII) includes a procedure that has been established to identify an actual emergency should such occur during the exercise;

(amended 2003/06/01)

(IX) is followed by a debriefing; and

(amended 2003/06/01)

(B) A flight attendant trainee shall observe and simultaneously receive a verbal commentary pertaining to:

(amended 2003/06/01)

(I) reporting for duty;

(amended 2003/06/01)

(II) pre-flight crew briefing;

(amended 2003/06/01)

(III) pre-flight safety and emergency equipment checks;

(amended 2003/06/01)

(IV) passenger boarding procedures;

(amended 2003/06/01)

(V) door closing and, if applicable, associated slide arming procedures;

(amended 2003/06/01)

(VI) pre-flight passenger safety briefings/demonstrations;

(amended 2003/06/01)

(VII) pre-flight and pre-landing warnings and checks, and securing of cabins and galleys;

(amended 2003/06/01)

(VIII) silent review;

(amended 2003/06/01)

(IX) post take-off procedures;

(amended 2003/06/01)

(X) in-flight procedures pertaining to safety;

(amended 2003/06/01)

(XI) cabin unserviceabilities reporting/recording;

(amended 2003/06/01)

(XII) in-flight turbulence procedures;

(amended 2003/06/01)

(XIII) rapid descent procedures associated with a rapid decompression;

(amended 2003/06/01)

(XIV) procedures associated with a missed approach/rejected landing; and

(amended 2003/06/01)

(XV) procedures associated with preparation for an emergency landing and evacuation.

(amended 2003/06/01)

(35) Route and Aerodrome Qualifications Training

(a) For aerodrome qualification, the pilot-in-command shall demonstrate knowledge of:

(i) terrain and minimum safe altitude;

(ii) seasonal meteorological conditions;

(iii) meteorological, communication and air traffic facilities, services and procedures;

(iv) navigational facilities;

(v) applicable aerodrome operating weather minima;

(vi) procedures applicable to flight paths over heavily populated areas and areas of high traffic density; and

(vii) obstructions, physical layout, approach aids and arrival, departure, holding and instrument approach procedures.

(b) For area qualification, the pilot-in-command shall demonstrate knowledge of:

- (i) significant terrain overflow, (as applicable);
- (ii) search and rescue procedures;
- (iii) meteorological, communication and air traffic facilities, services and procedures;
- (iv) navigational facilities; and
- (v) procedures to be used during contingencies.

(36) Extended Twin-Engine Operations (ETOPS) for Flight Crew Members
(amended 2007/06/30)

Flight crew practices and procedures for ETOPS operations shall be standardized in the air operator's training program/syllabus, with the exception of the concept and implications of ETOPS operation in a benign area of operation which shall only be defined in the air operator's operations manual.

Only ETOPS qualified pilots shall be designated for flight training and/or checking for ETOPS operations.

(a) Initial training for flight crew members

Subject to paragraph 725.124(36)(c), ETOPS initial training requirements shall be completed by each flight crew member that has not operated in an actual or simulated ETOPS environment for a period of 24 consecutive months or more.

The air operator's training program, with respect to ETOPS operations, shall include the initial training to be provided for each flight crew member in the following areas but not limited to:

(i) Ground training

(A) introduction to regulations, standards and associated operational approval that are applicable to the air operator's ETOPS operation;

(B) familiarization with AFM Type Design approval for ETOPS;

(C) familiarization with the air operator's ETOPS routes and areas of operation;

(D) familiarization with the location of adequate airports and the requirements permitting them to be designated as ETOPS alternate airports;

(E) detailed review of the air operator's ETOPS procedures including:

(I) dispatch procedures including the applicability of MEL items sensitive to ETOPS operations prior to the aeroplane being dispatched;

(II) navigational procedures required in the applicable ETOPS areas of operation;

(III) communication procedures required in the applicable ETOPS areas of operation;

(IV) procedures to evaluate the aeroplane's system capability prior to entering an ETOPS area of operation;

(V) diversion procedures and associated operational restrictions, if applicable and required, in the event of a failure or foreseeable failure of a single or multiple ETOPS significant system in any phase of flight, including:

1) emergency, abnormal or non-normal procedures as applicable;

2) procedures for in-flight restart of the propulsion systems and APU, if required; and

3) crew incapacitation;

(VI) procedures to be followed during any phase of flight in the event that there is a change in conditions at designated ETOPS alternate airports that would preclude a safe approach and landing;

(VII) procedures to ensure the use of emergency equipment including protective breathing and ditching equipment;

(VIII) procedures to effectively understand the use of approved additional or modified equipment required for ETOPS;

(IX) fuel requirements and management procedures to be followed during the enroute portion of the flight such as, but not limited to, independent crosscheck of fuel quantity indicators; and

Information Note: fuel flows could be used to calculate fuel burned and compared to indicate fuel remaining

(X) procedures to complete the flight crew documentation;

(F) performance, including:

(I) the use of performance data on one engine inoperative within the range of altitudes and weight configuration at which a diversion could occur;

(II) flight planning and plotting including all contingencies;

(III) flight performance progress monitoring; and

(IV) the effect of solar flare activity, cosmic radiation and HF propagation; and

(G) fuel and oil requirements including:

(I) minimum requirement;

(II) contingency fuel reserve; and

(III) critical fuel scenario.

If an element of the initial ETOPS ground training listed in subparagraph 725.124(36)(a)(i) is already covered in another part of the air operator's training program, the air operator may be credited for that training element provided there is a cross reference statement in the air operator's training program and that the element is trained for in the context of ETOPS operations.

(ii) Examination

Once the initial ground training has been completed, a comprehensive examination as per the requirements of subparagraph 725.124(1)(b)(iii) shall be administered to each flight crew member on the subjects specific to ETOPS; and

(iii) Flight training and checking

(A) Upon successful completion of a comprehensive examination required in subparagraph 725.124(36)(a)(ii), each flight crew member shall complete at least one sector of line indoctrination under the supervision of a qualified training pilot, in an actual ETOPS environment in the aeroplane where the flight crew member meets the applicable requirements of section 705.106.

(B) In addition to the elements specific to ETOPS during a walk around, each of the elements listed in subparagraph 725.124(36)(a)(i) shall be reviewed during the line indoctrination flight required in clause 725.124(36)(a)(iii)(A); and

(C) Upon satisfactory completion of the requirement of clause 725.124(36)(a)(iii)(B), each flight crew member shall complete an initial ETOPS line check in an actual ETOPS environment with a qualified check pilot assessing the comprehension of each of the elements listed in subparagraph 725.124(36)(a)(i). The ETOPS initial line check may be completed as an integral part of the line check required by paragraph 705.106(1)(d).

(b) Recurrent training for flight crew members

Subject to paragraph 725.124(36)(c), ETOPS ground recurrent training shall be completed by each flight crew member every 12 months or when a flight crew member has not operated in an actual ETOPS environment for a period of 13 consecutive months or more.

The air operator's training program with respect to ETOPS operations shall include an annual recurrent training to be provided to each flight crew member in the following areas:

(i) Ground training

- (A) Review of new regulations, standards and operational approvals, if applicable, that are applicable to the air operator's ETOPS operation (if applicable);
- (B) Review of new AFM Type Design approval for ETOPS (if applicable);
- (C) Review of new ETOPS routes and areas of operation used in the ETOPS area of operations (if applicable);
- (D) Summary review of the air operator's procedures listed in subclauses 725.124(36)(a)(i)(E)(I) to(X);
- (E) Review of the performance and fuel management requirements and procedures; and
- (F) Review, if applicable, of any ETOPS operational occurrences that have been reported in the air operator's reporting system or any other system, where there would be a benefit for each flight crew member to learn from these occurrences.

(ii) Flight checking

- (A) Subject to clause 725.124(36)(b)(ii)(C), the air operator shall ensure that:
 - (I) A percentage of line checks, required under section 705.106, is conducted in an actual ETOPS environment;
 - (II) The total percentage of ETOPS line checks required in subclause 725.124(36)(b)(ii)(A)(I) meets or exceeds the air operator's total annual percentage of actual ETOPS flights on each type of aeroplane; and
 - (III) The ETOPS line checks are conducted with a qualified check pilot assessing the comprehension of each element listed in subparagraph 725.124(36)(b)(i) in addition to the elements specific to ETOPS during a walk around;
- (B) The ETOPS line check shall be completed on a minimum of one sector in the aeroplane; and
- (C) A flight crew member that has not operated in an actual ETOPS environment for a period exceeding 13 consecutive months shall, prior to resuming actual ETOPS operation:
 - (I) complete a recurrent annual ground training as per the requirements of subparagraph 725.124(36)(b)(i); and
 - (II) complete a recurrent ETOPS line check in an actual ETOPS environment with a qualified check pilot assessing the comprehension of each of the elements listed

in subparagraph 725.124(36)(b)(i) in addition to the elements specific to ETOPS, during a walk around.

(c) Each flight crew member who meets the applicable requirements of section 705.106 for a new aeroplane type and for which the validity period of the ETOPS training requirements of paragraphs 725.124(36)(a) and (b) has not expired for a previously flown aeroplane type, shall:

(A) complete only those elements of the recurrent ground training requirements of subparagraph 725.124(36)(b)(i) applicable to the new type; and

(B) complete an ETOPS recurrent line check only as per the schedule of clause 725.124(36)(b)(ii)(A), provided that all of those elements identified in subparagraph 725.124(36)(b)(i) are reviewed to the satisfaction of a qualified training pilot on an actual ETOPS flight in the new aeroplane type during the line indoctrination required in section 705.106.

(37) Category II and III Operations

(a) Initial and Recurrent Ground Training

(amended 2006/06/30)

The air operator's initial and annual recurrent ground training program shall provide training for pilots-in-command (as pilot-flying), seconds-in-command (as pilot-not-flying) and, where applicable, second officers in the following subjects:

(amended 2011/06/30)

(i) the characteristics, capabilities and limitations of the ILS, including the effect on system performance of interference from other airborne or taxiing aircraft and ground vehicles;

(ii) the characteristics of the visual aids and the limitations on their use as visual cues in reduced visibilities with various glide path angles and cockpit cut-off angles, and the height at which various cues may be expected to become visible in actual operations;

(iii) the operation, capabilities and limitations of the airborne systems;

(iv) approach, missed approach and rejected landing procedures and techniques including the description of the factors affecting the height loss during a missed approach in normal and abnormal aircraft configurations;

(v) the use and limitations of RVR, including the applicability of RVR readings from different positions along the runway;

(vi) a basic understanding of obstacle limitation and the obstacle-free zone, including missed approach design criteria, obstacle clearance for CAT II/III operations and obstacle clearance during a go-around and rejected landing;

(vii) the effects of low level windshear, turbulence and precipitation;

- (viii) procedures and techniques for transition from instrument to visual flight in low RVR conditions, including the geometry of eye, wheel and antenna positions with reference to ILS reference datum height;
- (ix) the action to be taken if the visual reference becomes inadequate when the aircraft is below decision height, and the technique to be adopted for transition from visual to instrument flight should a go-around become necessary at these low heights;
- (x) the action to be taken in the event of failure of approach and landing equipment above and below decision height or alert height;
- (xi) the recognition of, and action to be taken in the event of failure of ground equipment;
- (xii) significant factors in the determination of decision height/or alert height;
- (xiii) the effect of specific aircraft malfunctions (e.g. engine failure) on auto-throttle and auto-pilot performance;
- (xiv) procedures and precautions to be followed while taxiing during limited visibility conditions; and
- (xv) standard operating procedures to be followed by crew members during normal, abnormal and emergency situations.

The air operator's annual recurrent ground training program shall cover the above subjects over a definite period of time (through a cycle).

(b) Initial training for the pilot-in-command as pilot-flying and second-in-command as pilot-not-flying, on a synthetic flight training device
(amended 2004/12/01)

- (i) two approaches, one of the approaches to be in an engine out configuration if the air operator's equipment is so certified and is approved to perform the manoeuvre;
 - (ii) a missed approach from the lowest minima authorized for the air operator or a rejected landing, as applicable;
- (amended 2011/06/30)

(iii) an automatic landing from one of the approaches or manual landing as appropriate, at the maximum crosswind authorized; and

(iv) for those CAT III operations predicated on the use of a fail-passive rollout control system, a manual rollout using visual reference or a combination of visual and instrument references.

(c) Annual training, or training periods as specified in an approved advanced qualification program for the pilot-in-command, synthetic flight training device
(amended 2006/06/30)

(i) one category II or III approach to a landing; and

(ii) a missed approach from the lowest minima authorized for the air operator, or a rejected landing as applicable.
(amended 2011/06/30)

(38) One-Engine Inoperative Ferry Flight Training**(a) General**

- (i) flight crew members' approval to conduct a one-engine inoperative ferry flight is contingent upon completion of this training program;
- (ii) wherever possible, one-engine inoperative ferry flight training shall be conducted in a synthetic flight training device; and
- (iii) the pilot-in-command must be checked annually and certified competent by an approved check pilot or a Transport Canada - Civil Aviation inspector.

(b) Ground Training

- (i) review of the air operator's company operations manual for one-engine inoperative ferry flights including:
 - (A) pre-flight, in-flight and post flight procedures;
 - (B) procedures for obtaining company authority for each individual ferry flight, including the names of officials who are authorized to grant such authority;
 - (C) procedures for the coordination of the flight at all stages, with ATS and the airport manager;
 - (D) the responsibility of the pilot-in-command to comply at all times with the operating conditions laid down in the ferry flight permit;
 - (E) the post flight reporting requirements; and
 - (F) the requirements for the crews to be trained and current to conduct one-engine inoperative ferry flights;
- (ii) limitations; and
- (iii) performance.

(c) Synthetic Flight Training Device Training/Flight Training(amended 1998/03/23)

- (i) All flight training shall be done in a synthetic flight training device or in the aeroplane.

(amended 1998/03/23)

- (ii) Initial synthetic flight training device training shall include:

(amended 1998/03/23)

- (A) two take-offs with one-engine inoperative, including one with the most critical engine inoperative; and

(amended 1998/03/23)

- (B) two instrument approaches and landings with one-engine inoperative, including one with the most critical engine inoperative.

(amended 1998/03/23)

(iii) Annual synthetic flight training device training shall include:

(amended 1998/03/23)

(A) one take-off with the most critical engine inoperative; and

(amended 1998/03/23)

(B) one instrument approach and landing with the most critical engine inoperative.

(amended 1998/03/23)

(iv) Aeroplane initial or annual training shall include:

(amended 1998/03/23)

(A) one take-off with the most critical engine at simulated zero thrust; and

(amended 1998/03/23)

(B) one simulated approach and landing with the most critical engine at simulated zero thrust.

(amended 1998/03/23)

(d) Aeroplane Training

The aeroplane training shall include:

(i) one take-off with the most critical engine at zero thrust; and

(ii) one simulated approach and landing with the most critical engine at zero thrust.

(39) Crew Resource Management Training for Crew Members

(amended 2004/12/01)

An air operator shall provide Crew Resource Management Training (CRM) in accordance with the following:

(a) Initial training is required for all crew members and shall cover the subjects in both (a) and (b):

(i) attitudes and behaviours;

(ii) communication skills;

(iii) problem solving;

(iv) human factors;

(v) conflict resolution;

(vi) decision making;

(vii) team building and maintenance; and

(viii) workload management.

(b) Annual training in safety and emergency procedures. It shall include, as applicable, joint participation of pilots and flight attendants and cover the following items:

(i) relationship of crew members;

(ii) review of accidents/incidents of air operators;

(iii) presentation and discussion of selected coordinated emergency procedures (practice of CRM skills); and

(iv) crew member evacuation drills, including debriefing.

(40) Airborne Icing Training

(amended 1998/09/01)

(a) Approved initial and recurrent training programs for all flight crew shall include airborne icing training to ensure that the crew is fully aware of the hazards presented by airborne icing and the operating procedures to avoid and exit hazardous icing conditions.

(b) The training program shall include:

(i) basis of certification for flight into known icing conditions;

(ii) airborne icing definitions and terminology;

(iii) aerodynamic effects of airborne icing;

(iv) airborne icing weather patterns, including both classical and non-classical mechanisms for freezing precipitation;

(v) flight planning and in flight icing information;

(vi) information specific to aircraft fleet concerning operation de-ice and anti-ice equipment, and operational procedures; and

(vii) company directives concerning operations in airborne icing contained in COMs, SOPs, and other company documents.

(42) Carry-On Baggage Control Training

(amended 1998/03/23)

(a) This training is required under subsection 725.42(5) and is mandatory for all employees and agents involved in carry-on baggage control.

(b) Training shall cover the list of elements in subsection 725.42(7).

(46) Safe Movement of Passengers to and from the Aeroplane

(amended 1998/03/23)

(a) This training is required under subsection 725.40(1) and is mandatory for crew members, ground handling and passenger agent staff (including contract personnel) involved with the transfer of passengers between the terminal building and the aeroplane.

(b) Training shall cover the list of subjects in subsection 725.40(1).

(47) Fuelling with Passengers on Board - Emergency Evacuation Procedures Training

(amended 1998/03/23)

(a) This training is required under paragraph 725.40(2)(o) and is mandatory for personnel in replacement of flight attendants when the aeroplane is being refuelled with passengers on board.

(b) The standard for such training is in the *Flight Attendant Training Standard* and must include the following elements of this publication:

(i) Evacuations (Initial - Part 4, Section 4):
(amended 2006/06/30)

(A) 4.4A.1-2;
(amended 2006/06/30)

(B) 4.4A.5;
(amended 2006/06/30)

(C) 4.4B.2;
(amended 2006/06/30)

(D) 4.4B.7;
(amended 2006/06/30)

(E) 4.4C.1;
(amended 2006/06/30)

(F) 4.4C.5;
(amended 2006/06/30)

(G) 4.4D.1;

(H) 4.4F.1-8;
(amended 2006/06/30)

(I) 4.4G.1-4;
(amended 2006/06/30)

(J) 4.4I.1(b);
(amended 2006/06/30)

(K) 4.4I.1(g);
(amended 2006/06/30)

(L) 4.4J.1;
(amended 2006/06/30)

(M) 4.4K.1; and
(amended 2006/06/30)

(N) 4.4K.3-4
(amended 2006/06/30)

(ii) Drills (Initial - Part 7):
(amended 2006/06/30)

- (A) 7.3, Aircraft Exit Operation Drills;
- (B) 7.4.3, Evacuation Drills, Unprepared, items iii-vi and items vii to xvii; and
- (C) 7.4.4 Evaluation Criteria ii to xvii.

NOTE: *Emergency Procedures Training for Pilots as required by subsection 725.124(14) is equivalent to the training set out in this Subsection.*

(b) Training shall cover the list of subjects in subsection 725.40(1).

(48) Controlled Flight into Terrain (CFIT) Avoidance Training

(amended 2000/06/01)

Subject to paragraph (d), air operators shall provide the following CFIT avoidance training to all flight crew members operating aeroplanes approved for flight under instrument meteorological conditions:

(a) initial and annual ground training:

- (i) factors that may lead to CFIT accidents and incidents,
- (ii) operational characteristics, capabilities, and limitations of GPWS (if applicable),
- (iii) CFIT prevention strategies,
- (iv) methods of improving situational awareness, and
- (v) escape manoeuvre techniques and profiles applicable to the aeroplane type;

(b) air operators with GPWS equipment using synthetic training devices in their approved initial training program shall conduct CFIT avoidance training as follows:

- (i) one escape manoeuvre performed in VMC in response to a GPWS warning, and
- (ii) one escape manoeuvre performed in IMC in response to a GPWS warning;

(c) air operators with GPWS equipment using synthetic training devices in their approved recurrent training program shall conduct CFIT awareness training biennially as follows:

- (i) one escape manoeuvre performed in VMC in response to a GPWS warning where the air operator is approved for VFR only operations, or
- (ii) one escape manoeuvre performed in IMC in response to a GPWS warning where the air operator is approved for IFR operations;

(d) where the flight crew members operate aircraft equipped with a Terrain Awareness and Warning System (TAWS), the training received on TAWS is considered to have met the requirements of paragraphs (a), (b) and (c).

(49) Low-Energy Awareness Training

(amended 2000/12/01)

- (a) Initial and recurrent ground and flight training is required for all flight crew members operating turbo-jet aeroplanes;
- (b) Ground training shall include:
 - (i) low-energy landing regime for the aircraft type,
 - (ii) aircraft and engine handling and performance characteristics in the low-energy regime, and
 - (iii) aircraft balked landing procedures;
- (c) Where flight training is conducted in a synthetic training device this training shall include one balked landing initiated in the low-energy regime.

(50) Engine Failure/Malfunction Recognition Training

(amended 2000/12/01)

- (a) Initial and recurrent ground and flight training is required for all flight crew members;
- (b) The ground training shall include:
 - (i) potential engine malfunctions and their causes,
 - (ii) proper identification of the malfunctions, and
 - (iii) proper responses to the malfunctions or failures;
- (c) Flight training shall be done:
 - (i) in a synthetic training device (where applicable), and
 - (ii) in approved simulators for all flight crews operating High Bypass Ratio Engines.

(51) Flight Deck Admission Control Training

(amended 2002/03/21)

- (a) An air operator shall provide initial and recurrent ground training to all its crew members on the following procedures:
 - (i) procedures for controlling admission to the flight deck of an aeroplane;
 - (ii) procedures for verifying the identity of any person authorized to be admitted to the flight deck;
 - (iii) procedures for entering and leaving the flight deck, including procedures for opening, closing and locking the flight deck door;
 - (iv) procedures for enabling a crew member to enter the flight deck in the event that a flight crew member becomes incapacitated; and

(v) if the aeroplane is equipped with a crew rest facility having a separate entry from the flight deck and from the passenger compartment, procedures for controlling the usage of the door between the crew rest facility and the passenger compartment.

(b) All crew members shall receive initial ground training prior to April 9, 2003, on the procedures listed in subparagraphs (a)(i) to (v); after that date, each new crew member shall receive initial ground training on these procedures and all crew members shall receive recurrent ground training on these procedures at least every three years.

(52) Pacific RNP-10 Training

(amended 2002/12/01)

For a flight crew member to qualify for operations in Pacific RNP-10 airspace, an air operator shall have initial and recurrent approved training programs that ensure that each flight crew member is proficient in the following areas:

- (a) flight planning for RNP-10 airspace;
- (b) navigation performance requirements for RNP-10 airspace;
- (c) en route procedures for RNP-10 airspace; and
- (d) contingency procedures for RNP-10 airspace.

(53) Reduced Vertical Separation Minima (RVSM) Training

(amended 2002/12/01)

For a flight crew member to qualify for operations in RVSM airspace, an air operator shall have initial and recurrent approved training programs that ensure that each flight crew member is proficient in the following areas:

- (a) knowledge of the floor, ceiling and horizontal boundaries of the RVSM airspace to be operated in;
- (b) rules on exclusion of non-RVSM compliant aircraft;
- (c) pilot procedures with respect to:
 - (i) pre-flight and in-flight altimeter checks,
 - (ii) use of the automatic altitude control system,
 - (iii) Minimum Equipment List (MEL) items applicable to RVSM operations,
 - (iv) special procedures for in-flight contingencies,
 - (v) weather deviation procedures,
 - (vi) track offset procedures for wake turbulence and inconsequential collision avoidance systems alerts, and
 - (vii) pilot level-off call;

(d) procedures for flight of non-RVSM compliant aircraft for maintenance, humanitarian or delivery flights; and

(e) use of ACAS/TCAS.

(54) Stabilized Constant-Descent-Angle (SCDA) Non-Precision Approach Training
(amended 2006/12/01)

The air operator shall ensure that the pilot-in-command and the second-in-command, in order to be able to conduct a stabilized constant-descent-angle (SCDA) non-precision approach, receive ground and simulator or flight training that addresses the following subjects within their initial and recurrent training programs:

(a) factors that affect altitude loss during the initiation of a missed approach;

(b) the relationship between the published missed approach point (MAP) and the position where a missed approach is commenced following a stabilized final approach descent to minimum descent altitude (MDA);

Information Note: The missed approach climb from a stabilized final approach descent will normally occur some distance before reaching the published MAP.

(c) the requirement to initiate a missed approach if the required visual reference necessary to continue to land has not been established, at the latest on reaching the earlier of:

(i) the minimum descent altitude, and

(ii) the MAP;

(d) the requirement to commence the horizontal (lateral) navigation portion of the published missed approach procedure at the MAP;

Information Note: It may be essential for obstacle clearance to delay any turns stated in the published missed approach procedure until the aircraft crosses the MAP.

(e) the requirement to ensure that any altitudes at step-down fixes between the final approach fix (FAF) and the MAP are respected;

(f) the operation of any aircraft computer-generated approach slope systems or other methods of computing stable approach paths to the target touchdown point;

Information Note: The effects of horizontal position error and temperature on the vertical path, whether it is derived from an inertial, barometric vertical navigation (Baro VNAV), or altimeter reference, shall be addressed.

(g) the requirement to verify any altitude and waypoint information from a navigation database against an independent source;

(h) crew coordination upon reaching MDA and during the execution of a missed approach; and

(i) utilization of temperature corrections to MDA and other published altitudes and remote altimeter correction factors, when required.

(55) Simultaneous Operations on Parallel or Near-Parallel Instrument Runways – ILS/Precision Runway Monitor (PRM) and Localizer Type Directional Aid (LDA)/PRM - Simultaneous Offset Instrument Approaches (SOIA) Training
(amended 2008/12/30)

(a) Training materials shall include:

(i) The published ILS/PRM and LDA/PRM - SOIA approach charts, and

(ii) The current FAA-produced and approved ILS PRM video entitled "*ILS/PRM Approaches Information for Air Carrier Pilots*".

(b) Initial Ground Training

(i) An air operator shall provide initial ground training to its flight crew members on the following procedures:

(A) ILS/PRM approach, and

(B) LDA/PRM – SOIA;

(ii) Before ILS/PRM or LDA/PRM - SOIA approaches may be carried out, each flight crew member shall have completed the initial ground training; and

(iii) The training shall be conducted in accordance with the procedures established in the air operator company operations manual.

(c) Initial Simulator Training

(i) Each flight crew member shall complete an ILS/PRM or an LDA/PRM - SOIA approach with a climbing or descending breakout manoeuvre under the supervision of an instructor, training pilot or a check pilot; and

(ii) The training shall be completed within 12 months from the date of approval of their PRM training program.

(d) Recurrent Ground Training

An air operator shall provide recurrent ground training to its flight crew members by providing a review of the ground training elements and the video referred to in paragraph (a) above.

(56) Unruly Passenger and Interference with a Crew Member Training Program
(amended 2009/06/10)

(a) The Unruly Passenger and Interference with a Crew Member Initial Training Program shall include, as applicable to the duties of the operational personnel:

(i) the air operator's policy with respect to:

(A) interference with a crew member, and

(B) unruly passengers;

(ii) the definitions of:

(A) interference with a crew member,

(B) levels of interference,

(C) physical and verbal assault,

(D) aggressive behaviour, and

(E) intimidation;

(iii) the air operator's procedures to prevent, manage and protect against interference with a crew member;

(iv) the hazards associated with interference with a crew member;

(v) the requirement to deny transporting persons whose actions or statements indicate the person may pose a risk to safety, and the responsibilities of operational personnel associated with this requirement;

(vi) the methods and procedures to detect and prevent unruly passenger behaviour, including:

(A) the importance of early detection, intervention and prevention, and

(B) factors that influence behaviour, causes and effects;

(vii) the air operator's specific procedures for:

(A) early detection and prevention of a potential incident, and

(B) prevention of the escalation of an incident;

(viii) methods of preventing or defusing volatile situations or aggressive behaviour;

(ix) techniques and skills to manage conflict;

(x) methods to maintain personal safety during an incident;

(xi) resources available when an incident occurs;

(xii) the importance, methods and contents of normal and discreet communication between operational personnel:

(A) to prevent boarding an unruly passenger, and

(B) when an incident occurs;

(xiii) the means and safe application of passenger restraints during incidents, including the safety of the restrained passenger;

(xiv) specific procedures for dealing with incidents involving:

(A) intimidation, physical and verbal assaults and threatening behaviour towards operational personnel by a passenger or a person about to board an aircraft,

(B) alcohol consumption and smoking on board, and

(C) non-compliance with a crew member's instructions;

(xv) procedures for limiting and controlling passenger access to areas in the vicinity of the flight deck door;

(xvi) special considerations for multi-cabin aircraft and single cabin aircraft;

(xvii) special considerations for single flight attendant and multi flight attendant operations;

(xviii) procedures for gathering evidence at the time of the incident;

(xix) procedures on when to report incidents and the responsibilities and procedures for completing written reports;

(xx) identification of the factors which may influence the trauma on the operational personnel involved in an incident and the potential post-incident effects;

(xxi) mechanisms to ensure support to operational personnel who have been affected by a traumatic incident;

(xxii) identification of the air operator's support system available to those who may be asked to testify regarding incidents of interference with a crew member;

(xxiii) the role of the legal system including:

(A) the legal authority of the pilot-in-command;

(B) the role of police authorities when on board;

(C) cooperation with police authorities;

(D) information to be included in statements to police authorities;

(E) police authority involvement when an incident occurs on the ground and following an incident that has occurred during flight;

(F) preparation as a witness for legal proceedings following an incident where charges have been laid, and

(G) review of all relevant laws and regulations including those that prohibit smoking on board the aircraft, boarding a passenger who appears to be intoxicated, service of alcohol on board to someone who appears to be intoxicated and acts of violence or disturbance of public peace, such as those contained in the *Criminal Code*.

(b) The Unruly Passenger and Interference with a Crew Member Annual Training Program shall include, as applicable to the operational personnel's duties, a review of:

(i) incidents that occurred during the past year;

(ii) any changes to procedures that occurred during the past year;

(iii) the procedures;

(iv) the methods of maintaining personal safety;

(v) the methods of preventing or defusing volatile situations or aggressive behaviour;

(vi) the techniques and skills to manage conflict; and

(vii) the means and safe application of passenger restraints during incidents including the safety of the restrained passenger

725.125 Conditional Approval of Training Program

The intent of a conditional approval of training program is to permit an air operator, when introducing a new type of aeroplane, to begin training of crew members while having in hand a proposed training program from the aircraft manufacturer or a contracting training agency. In most cases the training program is adequate to initiate the training and it will be used as a basis for an approved training program.

A training program will receive conditional approval when the following conditions are met:

(1) a training syllabus and a complete training program for initial training will have to be submitted;

(2) the training program shall include as a minimum the following, as applicable:

(a) an overview of the training program showing the requirements for initial training;

(b) a detailed content of the proposed ground training, including individual items covered in each training period in regards of technical aeroplane training, cockpit procedure training, FTD training, emergency procedures training or *Flight Attendant Training Standard* requirements;

(c) a detailed content of the proposed simulator and/or aeroplane training, including individual items covered in each training session;

(d) a description of the proposed training aids and training facilities; and

(amended 1999/09/01)

(e) a copy of the proposed manuals and handouts to be provided to the trainees.

725.126 Cabin Emergency Evacuation Trainer

The standard for a Cabin Emergency Evacuation Trainer is as follows:

(a) The aeroplane type(s) shall be accurately represented with respect to cabin layout and stowage for safety and emergency equipment in relation to the emergency exits provided. All features of the real aeroplane passenger and flight attendant seats adjacent to the exits must be incorporated.

(b) Each approved aeroplane exit type shall be capable of both normal and emergency operation and shall be representative in components, dimensions, weight and balance and method of operation, including extent of movement and forces. These specifications also apply to a free standing exit trainer.

(c) An appropriate surface area must be provided outside each emergency exit to enable occupants to leave the trainer during evacuation drills.

(d) The trainer need contain only those items which are representative of the aeroplane type(s) operated by the air operator.

(e) A minimum of four (4) rows of cabin seats with a proportional aisle(s) will be installed, in order to simulate a realistic cabin layout for emergency evacuation exercises/drills.

(f) The trainer shall be equipped with:

(i) a minimum of two (2) operational emergency exits (one door and one alternate exit or two (2) doors, as applicable) - plus one operational window exit (where applicable). The air operator may choose to equip the trainer with doors representative of more than one aeroplane type. Trainers may be equipped with operational exits on either port or starboard side or both;

(ii) at least one flight attendant station located at an operational exit, and additional flight attendant stations may be required depending on the grouping of exits contained in the trainer;

(iii) an operational P.A./intercom system and appropriate flight attendant panel(s) at each flight attendant station;

(iv) safety and emergency equipment of a type currently required on the aeroplane in the appropriate brackets and locations;

(v) operational flight deck and cabin call chimes;

- (vi) internal cabin markings, such as placards and exit markings;
- (vii) normal and emergency cabin lighting, including fail features;
- (viii) Passenger Service Units (PSU's) with deployable oxygen masks for passenger and flight attendant seats;
- (ix) operational 'No Smoking'/'Fasten Seat Belt' ordinance signs visible from each passenger seat and flight attendant station/position;
- (x) a method of simulating an unserviceable exit(s);
- (xi) fire simulation at window and door exits;
- (xii) simulated cabin windows and features necessary to darken the cabin;
- (xiii) facilities and sufficient speakers to simulate sound effect/crash noises audible throughout the cabin; and
- (xiv) smoke simulation capabilities.

Regulatory approval for use of training devices in lieu of an aeroplane will be contingent on the compatibility of the device to the related components of the training program and issued in conjunction with program approval.

Where an air operator arranges to use the emergency evacuation trainer or free standing exit trainer owned by another air operator, the training shall comply with the approved training program and operating procedures of the air operator whose crews are being trained, and items/equipment in the trainer shall be restricted if significant differences of cabin layout and equipment exist.

DIVISION IX - MANUALS

725.135 *Contents of Company Operations Manual*

Information Note:

(amended 2006/06/30)

The Company Operations Manual describes how the air operator will conduct its operations. Simply quoting in the manual extracts from the Canadian Aviation Regulations (CARs), Commercial Air Service Standards (CASS) or the guidance material is not sufficient as it does not provide a means by which the regulatory requirements are to be met.

The *Company Operations Manual* shall contain at least the following, as applicable to the operation:

- (a) preamble relating to use and authority of manual;
- (b) a table of contents;

- (c) amending procedures, amendment record sheet, distribution list and list of effective pages;
- (d) a copy of the air operator's certificate and operations specifications;
- (e) a chart of the management organization;
- (f) the duties, responsibilities and succession of command of management and operations personnel;
- (g) description of operational control system including:
 - (i) flight authorization and flight preparation procedures;
 - (ii) preparation of operational flight plan and other flight documents;
 - (iii) procedures to ensure the flight crew are advised, prior to dispatch, of any aeroplane defects that have been deferred, (by Minimum Equipment List or any other means);
 - (iv) flight watch, flight following and communication requirements;
 - (v) dissemination procedures for operational information and acknowledgement;
 - (vi) fuel and oil requirements;
 - (vii) weight and balance system;
 - (viii) accident/incident reporting procedures and procedures for reporting overdue aircraft;
 - (ix) use of checklists;
 - (x) maintenance discrepancy reporting and requirements of completion of flight; and
 - (xi) sample of operational flight plan and retention period;
(amended 1999/09/01)
- (h) sample of weight and balance form and retention period;
(amended 1999/09/01)
- (i) FDR and CVR procedures;
- (j) operating weather minima and applicable requirements for IFR, VFR, VFR at night, VFR over-the-top including alternate aerodrome requirements;
- (k) instrument and equipment requirements;
- (l) instrument approach procedures (including company approaches), and alternate aerodrome requirements;
- (m) procedures for establishing company routes in uncontrolled airspace;
- (n) procedures pertaining to enroute operation of navigation and communication equipment (including collision avoidance procedures);
- (o) operations in hazardous conditions such as icing, thunderstorms, white out, windshear;

- (p) aeroplane performance limitations;
- (q) carriage and securing of cargo, carry on baggage, commissary and equipment; (as applicable)
- (r) passenger briefing procedures;
- (s) use of aircraft flight manual, aircraft operating manual, standard operating procedures and minimum equipment lists (as applicable);
- (t) aeroplane ice, frost and snow critical surface contamination procedures;
- (u) procedures of carriage of dangerous goods;
- (v) fuelling procedures including:
 - (i) fuel contamination precautions;
 - (ii) bonding requirements;
 - (iii) fuelling with engine running (not permitted with passengers on board, refer section 602.09 of the *Canadian Aviation Regulations*); and
 - (iv) fuelling with passengers on board;
- (w) list of emergency survival equipment carried on the aeroplane and how to use equipment;
- (x) emergency procedures for:
 - (i) emergency locator transmitter;
 - (ii) passenger preparation for emergency landing/ditching;
 - (iii) emergency evacuation;
 - (iv) ground emergency coordination procedures; and
 - (v) unlawful interference;
- (y) minimum flight crew members required and flight crew member qualifications;
- (z) flight duty time limitations and rest requirements;
- (aa) training programs including copy of company training and qualification record form(s);
- (bb) use of oxygen;
- (cc) operational support services and equipment;
- (dd) passenger and cabin safety procedures;
- (ee) inspection details and frequency of inspection of emergency equipment carried on board the aeroplanes;
- (ff) policy regarding GPWS and TCAS; (if applicable);

- (gg) procedures for the use of RNAV;
- (hh) procedures for ETOPS, MNPS, CMPS and reclear flights, including log keeping, (if applicable);
- (ii) a policy on occupation of observer seat; (if applicable);
- (jj) a requirement for responsibility for preparing runway analysis charts;
- (kk) procedures for reduced VFR limits in uncontrolled airspace; (if applicable);
- (ll) crew pairing;
- (mm) a prohibition for aeroplanes with unserviceable auxiliary power units from being dispatched to land at airports where ground power units are not available, or not serviceable when:
 - (i) the aeroplane has no internal engine start capability; and
 - (ii) refuelling may be necessary and the aeroplane is prohibited from being refuelled with an engine running; or
 - (iii) when de-icing may be necessary and the aeroplane is prohibited from being de-iced with an engine running; and
 - (iv) be referenced with the appropriate Section of the MEL;
- (nn) carry-on baggage control program;
- (oo) safety management system policy and procedures;
(amended 2005/05/31)
- (pp) copies of all forms utilized including sufficient instruction on form completion;
- (qq) procedures for the safe carriage of animal and cargo handlers and crew members on cargo flights when floor proximity emergency escape path markings are not available;
- (rr) effective April 9, 2003:
(amended 2002/03/21)
 - (i) procedures for controlling admission to the flight deck of an aeroplane;
 - (ii) procedures for verifying the identity of any person authorized to be admitted to the flight deck;
 - (iii) procedures for entering and leaving the flight deck, including procedures for opening, closing and locking the flight deck door;
 - (iv) procedures for enabling a crew member to enter the flight deck in the event that a flight crew member becomes incapacitated; and

(v) if the aeroplane is equipped with a crew rest facility having a separate entry from the flight deck and from the passenger compartment, procedures for controlling the usage of the door between the crew rest facility and the passenger compartment;

(ss) procedures for the use of departure contingency procedures;
(amended 2008/12/30)

(tt) recording and post-flight reporting of aircraft observation of volcanic activity, including observation of:
(amended 2008/12/30)

- (i) pre-eruption volcanic activity,
- (ii) a volcanic eruption, or
- (iii) volcanic ash cloud;

(uu) procedures for preventing and managing incidents of interference with a crew member;
and
(amended 2009/06/10)

(vv) procedures for denying transportation to persons whose actions or statements indicate they may pose a risk to safety;
(amended 2009/06/10)

725.137 *Aircraft Operating Manual*

An aeroplane operating manual shall consist of the following:

- (1) table of contents;
- (2) list of effective pages;
- (3) amending procedures;
- (4) preamble;
- (5) identification of the aeroplane by type and registration it is applicable to;
- (6) aeroplane operating procedures and limitations that are not less restrictive than those contained in the aeroplane flight manual and *Canadian Aviation Regulations* as amended; and
- (7) aeroplane standard operating procedures meeting the requirements of section 725.138.

725.138 *Standard Operating Procedures (SOP's)*

The *Standard Operating Procedures Manual* required for compliance with the *Canadian Aviation Regulations* shall contain the following information for each type of aeroplane operated. Where there are significant differences in equipment and procedures between aeroplanes of the same type operated the *Standard Operating Procedures Manuals* shall show the registration mark of the aeroplane it is applicable to.

Required information, if contained in another publication carried on board the aeroplane during flight, it need not be repeated in the SOP.

Information Note:

(amended 2006/06/30)

The Standard Operating Procedures (SOP's) Manual describes how the air operator will conduct its operations. Simply quoting in the manual extracts from the Canadian Aviation Regulations (CARs), Commercial Air Service Standards (CASS) or the guidance material is not sufficient as it does not provide a means by which the regulatory requirements are to be met.

The SOP shall include the following as applicable to the operation:

- (1) table of contents;
- (2) list of effective pages;
- (3) amending procedure;
- (4) preamble;
- (5) communications;
- (6) crew coordination;
- (7) use of check lists;
- (8) standard briefings;
- (9) standard calls;
- (10) ramp/gate procedures;
- (11) battery/APU engine starts;
- (12) taxi;
- (13) rejected take-off;
- (14) take-off and climb;
- (15) cruise;
- (16) descent;
- (17) approaches IMC, visual, VFR, and circling;
- (18) landing;
- (19) missed approaches and balked landings procedures;
- (20) stall recovery;
- (21) fuelling with passengers onboard;

- (22) use of onboard navigation and alerting aids;
- (23) weight and balance control procedures;
- (24) check lists;
- (25) emergencies:
 - (a) planned and unplanned;
 - (b) pilot incapacitation;
 - (c) two - challenge rule;
 - (d) bomb threat and hijacking;
 - (e) engine fire/failure/shutdown;
 - (f) propeller over speed;
 - (g) fire, internal/external;
 - (h) smoke removal;
 - (i) rapid decompression;
 - (j) flapless approach and landing; and
 - (k) any inadvertent encounter with moderated to severe in-flight icing;
(amended 1998/09/01)
- (26) diagrams:
 - (a) normal take-off;
 - (b) engine out take-off;
 - (c) precision approach, all engines operating;
 - (d) precision approach, engine out;
 - (e) non-precision approach, all engines operating;
 - (f) non-precision approach, engine out;
 - (g) go-around, all engines operating;
 - (h) go-around, engine out;
 - (i) VFR circuits;
 - (j) partial flaps/slats approach; and
 - (k) flapless approach.

DIVISION XI - INTERFERENCE WITH A CREW MEMBER

(amended 2009/06/10)

725.172 Preventing and Managing Incidents of Interference with a Crew Member

(amended 2009/06/10)

(1) The air operator's procedures to prevent and manage incidents of interference with a crew member shall:

(amended 2009/06/10)

- (a) include a statement of the air operator's policy on unruly passengers and interference with a crew member;
- (b) identify the procedures to be followed when a risk to safety is detected;
- (c) identify the criteria that will be used in determining the acceptance or refusal to transport a passenger or a person about to board an aircraft who may be considered a risk to safety;
- (d) identify the means by which operational personnel will be notified when an incident of interference has occurred and indicate the importance of notifying other operational personnel of the occurrence of such an incident when it may expose them to the same risk;
- (e) identify the factors which may contribute to unruly passenger behaviour and the means by which to eliminate them where feasible;
- (f) include the means by which operational personnel can detect early indications of unruly passenger behaviour which may lead to interference with a crew member;
- (g) include the methods available to prevent or defuse volatile situations or aggressive behaviour;
- (h) identify the ways in which unruly passenger behaviour can constitute interference with crew members;
- (i) identify the responsibilities of the operational personnel, when an incident occurs;
- (j) identify when and how to determine if overriding safety of flight considerations exist and who is responsible to make this determination;
- (k) identify methods of maintaining personal security during an incident;
- (l) include the methods of restraining passengers including maintaining the safety of the restrained passenger;
- (m) identify which authorities must be notified when an incident occurs and the procedures for notification;
- (n) identify the procedures for debriefing following an incident including the personnel that should be debriefed; and

- (o) identify what assistance is available to the affected employee(s) involved in an incident.

Information Note: An air operator should review and coordinate these procedures internally to ensure there is no conflict between these procedures and their security procedures. Nothing in this standard is intended to supersede or conflict with any requirements outlined in the Canadian Aviation Security Regulations or the Air Carrier Security Measures.

725.174 Reporting Incidents of Interference with a Crew

Member

(amended 2009/06/10)

(1) For the purposes of subsection 705.174(3) of the *Canadian Aviation Regulations*, the report for each occurrence to the air operator must include, but is not limited to, the following information:

(amended 2009/06/10)

- (a) flight information including aircraft type and flight identification;
- (b) date and time of incident;
- (c) names of crew members involved in the occurrence;
- (d) a description of the incident;
- (e) level of interference;
- (f) any suspected causal factors, if known;
- (g) nature of obvious injuries to any passenger on board which resulted from the incident;
- (h) nature of any injuries to any crew member on board which resulted from the incident;
- (i) action(s) taken by pilot-in-command and crew member(s) during the incident and the level of success of those actions;

Information Note: This normally includes the methods and time used to resolve the incident.

- (j) involvement of police authorities;
- (k) whether the incident occurred while the aircraft was on the ground or during flight and if so, what phase of flight;
- (l) any available information on passenger identity; and
- (m) any additional information which the crew member deems pertinent.

Information Note: A crew member could offer their opinion as to what went well and what could be improved for future incidents. This could also include any available information that the crew member may have regarding the identity of the passenger, however does not obligate a crew member to attempt to obtain this information as such action could exacerbate an on board situation.

(2) For the purposes of subsection 705.174(5) of the *Canadian Aviation Regulations*, the statistics shall be reported bi-annually and shall include the following data:
(amended 2009/06/10)

(a) the number of incidents and their level as defined in section 705.175 of the *Canadian Aviation Regulations*;

(b) the number, severity and type of reported injuries to passenger(s) and crew member(s);

Information Note: *The injuries can be categorized as a serious injury where medical attention is required or any injury that is likely to require admission to a hospital. Any broken limbs or lacerations requiring stitches are considered severe. Any other injury can be categorized as "Minor/Other/None"*

(c) the number of incidents that occurred while the aircraft was on the ground and the number of incidents that occurred during flight phase;

(d) the suspected causal factors if known; and

(e) the number and level of incidents where law enforcement was requested.

(3) For the purposes of subsection 705.174(5) of the *Canadian Aviation Regulations*, the statistics shall be forwarded to the Director, Policy and Regulatory Services, Transport Canada, 330 Sparks Street, Tower C, Place de Ville, Ottawa, Ontario, K1A 0N8.
(amended 2009/06/10)



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CARs

CANADIAN AVIATION REGULATIONS

PART VII - COMMERCIAL AIR SERVICES

STANDARD 726 - AIR OPERATOR MAINTENANCE

Canada

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NOTE

All amendments to the CARs will be indicated by the Coming into Force date, immediately following the amended text.

RECORD OF AMENDMENTS

[illegible]

[illegible]

STANDARD 726 - AIR OPERATOR MAINTENANCE

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PART VII - COMMERCIAL AIR SERVICES STANDARDS

STANDARD 726 - AIR OPERATOR MAINTENANCE

Information Notes:

(i) In these standards, "the person responsible for the maintenance control system" means the person appointed by the air operator under paragraph 706.03(1)(a).

(amended 2005/05/31)

(ii) Unless otherwise explicitly indicated, nothing in the regulations, or this standard, requires the air operator to adopt the titles of the approved manuals, positions and programs used in the regulatory documents. The designations expressed are meant to facilitate the drafting of the applicable regulations and standards. Approved organizations are free to use any designation they wish, provided the pertinent regulations and standards are complied with.

(amended 2005/05/31)

(iii) Where the holder of an Air Operator Certificate also holds any other certificate which requires an approved manual, a separate manual can be provided with respect to each separate approval.

(iv) Where the certificate holder chooses to combine these separate manuals, it can be done provided that each division of the manual identifies the part of its source regulation (e.g. a combined AMO-Air Operator manual can be divided into Division I for the AMO, and Division II for the Air Operator requirements).

(v) Conversely, a combined AMO-Air Operator manual can also be fully integrated, provided that a statement is included for each section of the manual to indicate whether that particular section is intended as a means of compliance with Subpart 573 or Subpart 706 of the Canadian Aviation Regulations.

(vi) In addition, a combined manual can also be fully integrated with no reference to applicable source regulations. However, in such a case, should the Minister be required to take action against a certificate in respect of which a combined manual is in effect, the Minister will have to take action against both certificates if a clear distinction within the affected sections cannot be made.

726.01 Application**Information Note:**

These standards are applicable to the control of maintenance and the performance of elementary work and servicing in respect of aircraft operated for commercial purposes under Part VII of the Canadian Aviation Regulations.

726.02 Maintenance Control System**Information Notes:**

(i) Subpart 706 of the Canadian Aviation Regulations provides the requirements for the maintenance of air operator aircraft. When procedures are developed as required by those regulations, the total of those procedures is referred to as the maintenance control system. The air operator shall not permit any person to perform maintenance or elementary work unless that maintenance or elementary work is conducted in conformity with the requirements of that maintenance control system.

(ii) Persons performing work on the air operator aircraft shall be made aware of the maintenance control procedures in effect for any air operator's aircraft. For this reason those procedures shall be contained in the Maintenance Control Manual required by Section 706.08 of the Canadian Aviation Regulations. This manual represents a descriptive disclosure to Transport Canada, of the methods the air operator has chosen to achieve compliance with the Canadian Aviation Regulations respecting maintenance.

(iii) It is intended that the maintenance control system describe what work is required to maintain the air operator's aircraft in conformity to the applicable type design and any additional operational requirements. This system is not intended to provide information on how to perform maintenance.

726.03 Duties of Certificate Holder
(amended 2005/05/31)**Information Note:**

The person responsible for the maintenance control system appointed pursuant to paragraph 706.03(1)(a) should be a member of the air operator's staff. This is to ensure that the person appointed is free of any conflict of interest, and is primarily responsible to the air operator in regard to any dealings with the maintenance organization. Employees of a contracting maintenance organization therefore, do not qualify for this position. The requirement is not intended to imply that the person appointed must be a full-time employee. Persons may be appointed on a part-time basis, provided they are available for such periods as are necessary to effectively control the maintenance system, having regard to the type and frequency of flight operations.
(amended 2005/05/31)

(1) An applicant for the “Person Responsible for Maintenance Control System” position shall demonstrate, during an interview conducted by Transport Canada regional personnel, that he or she is knowledgeable in respect of the air operator’s policies approved by the Minister and the topics listed below:

(amended 2005/05/31)

- (a) duties and responsibilities of the appointed position;
- (b) duties of persons who have been assigned functional responsibilities;
- (c) responsibilities of the Operator in relation to those of the AMO;
- (d) identification of acceptable reference data for maintenance schedules;
- (e) use of fleet sampling techniques;
- (f) control of repetitive inspections;
- (g) reliability programs;
- (h) types and methods of control of mandatory maintenance tasks;
- (i) defect control;
- (j) technical dispatch requirements;
- (k) maintenance release requirements;
- (l) control of elementary work and servicing;
- (m) responsibility for record keeping; and
- (n) the function of quality assurance.

(2) The interview is designed to establish the applicant’s knowledge. Questions and responses will be recorded.

(amended 2005/05/31)

726.04 Maintenance Personnel and Facilities

(1) Subsection 706.04(1) of the *Canadian Aviation Regulations* requires that the certificate holder provide the person responsible for maintenance with a sufficient number of personnel to ensure the control of all required maintenance. This control includes, but is not limited to:

- (a) the initial development of the maintenance schedule as required by Section 605.86 of the *Canadian Aviation Regulations*;
- (b) scheduling maintenance, elementary work and servicing to be performed within the time constraints specified in the approved maintenance schedule;
- (c) scheduling the accomplishment of any Airworthiness Directives;
- (d) operation of the evaluation program required by Section 706.07 of the *Canadian Aviation Regulations*, to ensure that the procedures, and in particular the maintenance schedule required by Section 605.86 of the *Canadian Aviation Regulations* continue to be effective and remain in compliance with the regulations;

(e) the proper dispatch of aircraft, in regards to:

(i) the availability of spare parts and the control of defects;

(ii) conformity with the type design; and

(iii) the requirements of other applicable operating rules;

(f) manage the issuance of authorizations to personnel who are assigned to perform elementary work and servicing;

(g) liaison with approved organizations for the performance of maintenance; and

(h) the initial development and the updating of the company maintenance control manual.

(2) Subsection 706.04(1) of the *Canadian Aviation Regulations* also requires that facilities, data, equipment, supplies and spares be provided to ensure the control of all required maintenance. This requirement includes but is not limited to:

(a) a place of business, with a fixed address;

(b) communications equipment (such as telephones, facsimile machines, Telex, Selective Calling [Selcal] or ARINC Communicating, Addressing and Reporting System [ACARS]);

(c) any devices used to establish when a particular aircraft requires maintenance. This may include planning bulletin boards, card files, or a computer system;

(d) where the air operator performs elementary work or servicing, the equipment and tools necessary to comply with the performance rules of Section 571.02 of the *Canadian Aviation Regulations*;

(e) sufficient supplies and spare parts to ensure timely rectification of defects in regard to the MEL provisions; and

(f) a secure, dry storage area to retain aircraft technical records.

726.05 Defect Recording and Control

(1) Pursuant to section 706.05 of the CARs, the defect recording system has to include a method to highlight defects that recur, so that they are readily identifiable by flight crews and the maintenance organization at all bases where the aircraft is operated. The air operator is responsible for identifying defects as recurring defects to maintenance personnel in order to avoid the duplication of unsuccessful attempts at rectification.

Amended 2008/12/30

(2) Pursuant to section 706.05 of the CARs, the defect control system has to ensure that the rectification of a defect identified as a recurring defect will take into account the methodology used in previous repair attempts.

Amended 2008/12/30

(3) For the purposes of these standards, defects are recurring defects if a failure mode is repeated three times, on a particular aircraft, within 15 flight segments of a previous repair made in respect of that failure mode.

(amended 2008/12/30)

726.06 Technical Dispatch Procedures

Information Note:

An aircraft is considered to be airworthy where a Certificate of Airworthiness has been issued and the aircraft conforms to the conditions of issue for that certificate. A further confirmation of certification attesting to the airworthiness of an aircraft is not required.

(1) The purpose of the technical dispatch procedures is to ensure that only those aircraft that conform to applicable airworthiness, operational, and corporate requirements are dispatched into service. This system also forms the basis upon which the pilot-in-command will determine aircraft serviceability in respect of airworthiness directives, maintenance, weight and balance control, operational, or corporate requirements.

(2) Where an air operator deploys an aircraft to a location that is outside of its main area of operation, it is incumbent on the air operator to ensure that the technical dispatch system required by Section 706.06 of the *Canadian Aviation Regulations* remains effective.

726.07 Quality Assurance Program

(amended 2005/05/31)

Information Note:

The Quality Assurance Program (hereinafter the program) established under section 706.07 of the Canadian Aviation Regulations (CARs) is not intended to be based solely on a system of end product inspection, but rather upon periodic verifications of all aspects of the systems and practices used in the control and performance of maintenance. The program should provide an unbiased picture of the air operator's performance, to verify that activities comply with the MCM and confirm that the systems and procedures described in the MCM remain effective.
(amended 2005/05/31)

(1) The program shall, as a minimum, cover all functions defined within the MCM and include all elements necessary to ensure effectiveness, quality and safety. It shall confirm that the air operator is in compliance with the applicable regulations and with the MCM by addressing operational and environmental conditions, organizational structure, record keeping systems, etc., and ensure that all referenced procedures remain applicable and effective.
(amended 2005/05/31)

(2) Where the air operator carries passengers in single engine aircraft under IFR or VFR at night pursuant to subsection 703.22(2), the program shall include engine trend monitoring or equivalent procedures to identify any deterioration in engine performance and reliability.
(amended 2005/05/31)

(3) The audits required under paragraphs 706.07(3)(a) and (b) may be conducted on a progressive or segmented basis, provided that the entire organization is audited within the applicable interval.

(amended 2005/05/31)

Information Note:

A proportion of random audits should be carried out while activities covered by the MCM and maintenance schedules are in progress, including work being performed at night time.

(amended 2005/05/31)

(4) Activities related to the program may be performed by employees of the air operator or by external agents. Persons may be assigned responsibility for other duties, in addition to those related to the program, provided that the program responsibilities take precedence over all other responsibilities.

(amended 2005/05/31)

726.08 Maintenance Control Manual

(1) Except where information is otherwise incorporated by reference pursuant to subsection 706.08(2) of the *Canadian Aviation Regulations*, the maintenance control manual (MCM) of an air operator shall contain at least the following information:

(a) a table of contents;

(b) the legal name of the air operator and, where that name is not the name under which the air operator does business, its trade name;

(c) a brief description of the organization which includes the following information:

(i) the approximate size of the organization;

(ii) the geographic location of the office facilities and/or their operation's base when not co-located;

(iii) the type and number of aircraft operated; and

(iv) the nature of the operation;

(d) a statement signed by the air operator confirming that the MCM, and any incorporated documents identified therein, reflect the air operator's means of compliance with the Regulations, as required by Section 706.08 of the *Canadian Aviation Regulations*;

Information Note:

Prior to submitting for ministerial approval an amendment to the MCM, pursuant to subsection 706.08(4), the person responsible for the maintenance control system may authorize amendments or re-issue of the MCM, but the statement authorizing the MCM document itself must be signed by the air operator.

(amended 2005/05/31)

(e) a description of the MCM amendment control procedure, to ensure compliance with the requirements of subsections 706.08(4) and 706.08(7) of the *Canadian Aviation Regulations*;

(f) a means of identifying each page of the MCM as required by subsection 706.08(4) of the *Canadian Aviation Regulations*. This shall be in the form of a List of Effective Pages, with each page numbered and either dated or marked with a revision number;

Information Note:

The amendment control pages in use prior to the publication of the Airworthiness Manual shall no longer be acceptable as the sole means of control for amendments to MCMs. Each page of an MCM shall be linked, by a page number and either a date or a revision number, to a list that identifies the most recent date of issue for that page.

(g) a description of the system used to distribute the manual, including the name or title of each person who holds a copy of the manual, to ensure compliance with the requirements of subsection 706.08(6) of the *Canadian Aviation Regulations*;

Information Note:

Current copies of the air operator's MCM, or the relevant portions thereof, must be made available to all personnel performing maintenance, elementary work or servicing on the air operator's aircraft.

(h) where functions have been assigned pursuant to subsection 706.03(3) of the *Canadian Aviation Regulations*:

(i) the name and title of the person to whom the functions have been assigned;

(ii) a description of the functions that have been assigned to each person; and

(iii) where necessary to ensure comprehension, a chart depicting the distribution of the functions.

(i) where the organization uses, pursuant to subsection 571.02(1) of the *Canadian Aviation Regulations*, standards for the performance of elementary work or servicing that are other than those recommended by the manufacturer, the identification of those standards;

(j) procedures to ensure that regulatory information and technical data appropriate to the work performed are used in respect of elementary work and servicing, as required by Section 571.02 of the *Canadian Aviation Regulations*;

(k) details of the methods used to record the maintenance, elementary work or servicing performed, and ensure that any defects are recorded in the technical record established pursuant to Section 605.92 of the *Canadian Aviation Regulations*;

Information Note:

Although an air operator certificate does not entitle the certificate holder to perform maintenance, it is the air operator who shall establish the record system that will be used to record the maintenance of his/her aircraft. Therefore, the air operator's MCM must be made available to all persons performing maintenance.

(l) the identification of any maintenance schedule approved in respect of any of the air operator's aircraft;

Information Note:

It is not intended that the complete maintenance schedule be included in the MCM. Although an operator can append a maintenance schedule to his/her manual, the maintenance schedule shall be controlled under its own List of Effective Pages as required by Subpart 625 - Aircraft Equipment and Maintenance Standards.

(m) a detailed description of the procedure used to ensure that any maintenance tasks required by the maintenance schedule, an airworthiness directive, or any task required for the rectification of a defect is completed within the time constraints specified in Subpart 605 of the *Canadian Aviation Regulations*;

(n) a description of the evaluation program required by Section 706.07 of the *Canadian Aviation Regulations*;

(o) a description of the defect rectification and control procedures required by Section 706.05 of the *Canadian Aviation Regulations*, including details of:

(i) the methods used to detect and report recurring defects (see Section 726.05); and

(ii) unless incorporated into the MEL preamble, the procedures for scheduling the rectification of defects whose repair has been deferred;

(p) the procedures used to report service difficulties in accordance with Section 706.14 of the *Canadian Aviation Regulations*;

(q) a description of the technical dispatch procedures, including procedures for ferry-flight authorizations, extended range operations (EROPS), all weather operation, or any other special operation, as required by Section 706.06 of the *Canadian Aviation Regulations*;

(r) procedures to ensure that only parts and materials that **comply with Standard 571** of the *Canadian Aviation Regulations* are used in the performance of elementary work or servicing, including any details respecting part pooling arrangements that have been entered into;
(amended 2012/06/30)

Information Note:

This may include storage and fuel dispensing procedures used by an operator that have been developed to comply with those set by national regulations or established by a standards setting organization that is internationally recognized. An example would be the Canadian Standards Association (CSA).
(amended 2012/06/30)

- (s) a description of the methods used to ensure that the persons authorized to perform elementary work or servicing are trained as required by Section 706.12 of the *Canadian Aviation Regulations* and qualified in accordance with the requirements of Section 706.10 or 706.11 of the *Canadian Aviation Regulations*, as applicable;
- (t) a description of the kinds of personnel records to be retained as required pursuant to Section 706.13 of the *Canadian Aviation Regulations*;
- (u) a description of the procedure used to ensure that the empty weight and balance of an aircraft is recorded in accordance with the requirements of Section 571.03 or 605.92 of the *Canadian Aviation Regulations*;

Information Notes:

- (i) *Standards applicable to weight and balance reports, including the use of reports made in respect of multiple-configurations are contained in Appendix C of Chapter 571 of the Airworthiness Manual.*
- (ii) *Notwithstanding the provisions of a load control system used by the air operator, an air operator may also use a fleet empty weight and balance control program. Appendix A of these standards, currently held in abeyance, will formulate the requirements of the fleet empty weight and balance control program.*
- (v) details of the procedures governing maintenance arrangements entered into pursuant to Section 706.09 of the *Canadian Aviation Regulations*, and a list of all such arrangements. This shall include the procedure used to communicate to an approved maintenance organization the maintenance requirements with regard to planned and unforeseen maintenance activities as well as those mandated by airworthiness directives; and
- (w) the identification of any person eligible to apply for flight authorities in respect of the Air Operator's aircraft.

Information Notes:

- (i) *Some activities of the organization which are subject to frequent change can more effectively be addressed in manuals separate from the MCM thereby avoiding the necessity for frequent amendments for routine changes in the organization. The incorporation by reference provisions of subsection 706.08(2) of the Canadian Aviation Regulations are intended to provide a means for this. Under these provisions the person designated in accordance with the assignment of management functions provisions is required to ensure that the incorporated manuals, documents or lists continue to comply with the requirements established in the policy contained in the MCM.*
- (ii) *Under the provisions of subsection 706.08(2) of the Canadian Aviation Regulations, each person responsible for an incorporated reference shall certify in writing that the referenced manual meets the requirements of the MCM policies established with respect to that reference. This shall take the form of a certification statement in the front of the incorporated document*

or list. This certification shall be made on initial incorporation of the incorporated document, and on each amendment thereof.

(2) Approval of the Minister shall be linked to each page of the MCM pursuant to subsection 706.08(4) of the *Canadian Aviation Regulations*. This will normally be done by approving a list of effective pages. Alternatively in the case of manuals containing a small number of pages, approval can be shown on each page. Acceptance of the procedure for maintaining the referenced manual shall be indicated by approval of the MCM.

Information Notes:

(i) For emergency situations, the provisions of subsection 706.08(3) of the Canadian Aviation Regulations provide a means to authorize an air operator to control maintenance outside the policies and procedures contained in the MCM. This can occur for any number of reasons; however, approval shall not be granted unless the applicant can supply evidence to demonstrate that safety of the product will not be adversely affected.

(ii) Pursuant to subsection 706.08(5) of the Canadian Aviation Regulations requirements, where an MCM is not found to meet the requirements of this Part, whether through a change in the requirements, a change in the organization or its activities, or through an inadequacy shown to exist by verification inspections conducted under the quality assurance program, or any other reason that affects the manual's conformity to requirements, the certificate holder is responsible to promulgate and seek approval forthwith for an amendment to the MCM.

(iii) Pursuant to the requirements of subsection 706.08(6) of the Canadian Aviation Regulations, an air operator shall provide a current copy of the MCM, or relevant portions thereof, to each person who performs or certifies work. In the case where only a portion of the manual is provided, it shall be sufficiently comprehensive that the person performing the tasks has all relevant information. For non-scheduled work, temporary copies of the relevant portions of the MCM, or any incorporated reference, can be sent via facsimile transmission.

726.09 Maintenance Arrangements

Information Notes:

(i) Section 706.09 of the Canadian Aviation Regulations requires that an air operator develop specific procedures governing maintenance arrangements entered into by the air operator, and that the procedures be detailed in its MCM.

(ii) Nothing in the regulation prevents an air operator from dealing with more than one AMO or from changing established arrangements, provided the new arrangement also meets the requirements of Section 706.09 of the Canadian Aviation Regulations.

(iii) Section 706.09 of the Canadian Aviation Regulations also provides that, where an air operator chooses not to include in its MCM approval procedures in respect of maintenance arrangements, each specific maintenance arrangement entered into by the air operator shall be individually submitted for approval by the Minister.

(1) Where an air operator is the holder of an AMO Certificate that is appropriate to the maintenance of the type of aircraft being operated, a statement to that effect shall be included in the general scope of work statement in its MCM.

Information Notes:

- (i) In such a case as stated in subsection (1), the only maintenance arrangements requiring description will be those to purchase services from other AMOs to cover those unforeseen circumstances, i.e. in an emergency, where maintenance is required outside of existing arrangements.*
 - (ii) Procedures to provide for emergency maintenance services will normally be in the form of recognizing a company purchase order, including on that purchase order the requirement to perform work in accordance with Canadian Aviation Regulation requirements, along with an indication, usually by check box, to denote when a maintenance release is required.*
 - (iii) Pursuant to subsection 706.09(3) of the Canadian Aviation Regulations, Maintenance Specifications will be issued by the Minister, in the following circumstances:*
 - (a) a Canadian air operator has maintenance performed in a State with which Canada has an airworthiness agreement, and the agreement specifically requires that the Minister issues a Maintenance Specification to the air operator or upon request from the foreign state; or*
 - (b) a Canadian air operator has maintenance performed in a State with which Canada has no airworthiness agreement.*
- (2) Maintenance Specifications issued by the Minister will:
- (a) confirm that the air operator's maintenance arrangement approval procedures contained in its MCM meet the requirements of the commercial air service standards; or*
 - (b) approve a specific and singular maintenance arrangement in a foreign state with which Canada has no airworthiness agreement, where all conditions, necessary to ensure that maintenance conforms with the requirements of Part V of the Canadian Aviation Regulations, are met.*

Information Note:

For the purpose of determining if a State is a party to an airworthiness agreement with Canada as outlined in subparagraph 706.09(1)(b) of the Canadian Aviation Regulations, and to establish whether an agreement applies in a particular case, it may be necessary to obtain a copy of TP8910 from the Chief, Programs Division, Airworthiness Branch, Ottawa, Ontario, Canada, K1A 0N8.

726.10 Elementary Work for Air Operators

Information Notes:

(i) *Appendix A of Subpart 625, Aircraft Equipment and Maintenance Standards lists the tasks which constitute elementary work for an air operator.*

(ii) *Under the provisions of the Aeronautics Act, elementary work is a form of maintenance. However, for the purpose of the Canadian Aviation Regulations, elementary work has been identified as a classification of specific tasks that are not subject to a maintenance release. Because these tasks are not subject to a maintenance release, they need not be performed by the holder of an AME licence, nor by persons working under an AMO Certificate. For these reasons, the air operator is responsible to control authorizations to persons who can perform elementary work.*

(iii) *Pursuant to Section 706.10 of the Canadian Aviation Regulations requirements, an air operator can authorize any person to perform elementary work provided that person has been trained to perform the specific task and has completed the task at least once under the supervision of the holder of an AME licence or an organization holding an Approved Training Organization's certificate issued pursuant to Subpart 403 of the Canadian Aviation Regulations. There is no requirement for the AME to hold any special rating. The training and records requirements applicable to these provisions are detailed respectively in Sections 726.12 and 726.13 of these standards.*

726.11 Servicing

Information Notes:

(i) *Any person can perform, or request the performance of servicing on behalf of an air operator, providing that person has been trained in accordance with the requirements detailed in Section 726.12 of these standards.*

(ii) *The definition for servicing is provided in Subpart 101 of the Canadian Aviation Regulations.*

(iii) *The provisions of Section 706.11 of the Canadian Aviation Regulations do not require that individual authorizations be issued to persons performing servicing, or persons who request the performance of servicing. The regulations only require that an air operator develop a system to ensure that those persons are trained as required by Section 726.12 of these standards.*

(iv) *Where an air operator does not service aircraft himself, he is responsible to ensure that any persons who request the performance of servicing be trained. This includes flight crew members of the air operator's staff.*

For example:

In the case of aircraft refuelling, it is often the responsibility of the flight crew, as the persons requesting the servicing, to specify the type and quantity of fuel to be uploaded, and in doing so also specify any special precautions, such as aircraft balance considerations, during the fuelling process. These provisions are equivalent to the requirement for the air operator to specify maintenance task requirements to AMOs.

726.12 Training Program

(1) The training program required by section 706.12 of the CARs shall ensure that personnel trained are familiar with the regulations, standards, air operator procedures and human factors issues related to the work for which they are responsible.
(amended 2002/09/01)

(2) The training program shall include:

(a) initial training to ensure that persons performing elementary work or servicing are aware of the pertinent regulations, standards and air operator procedures associated with that work;

(amended 2002/09/01)

(b) update training to ensure that personnel remain competent and are made aware of any changes to the pertinent regulations, standards and air operator procedures;

(amended 2002/09/01)

(c) additional training where it is shown to be necessary by a finding made under the evaluation program maintained under section 706.07 of the CARs; and

(amended 2002/09/01)

(d) procedures to ensure staff are kept aware of maintenance safety related issues in general, by means of bulletin boards, information notices, company publications, verbal briefings, or by similar means.

(amended 2002/09/01)

(3) Human factors training shall include instruction in:
(amended 2002/09/01)

(a) human performance;

(b) factors influencing human error including:

(i) fatigue;

(ii) stress;

(iii) assertiveness;

(iv) awareness;

- (v) resources;
 - (vi) knowledge;
 - (vii) teamwork;
 - (viii) norms (commonly accepted standards and procedures);
 - (ix) complacency;
 - (x) pressure;
 - (xi) distraction; and
 - (xii) communication;
- (c) error management, including error prevention and error containment.

(4) Training on the regulations shall ensure, as a minimum, that personnel are aware of their responsibilities with regard to the performance rules of section 571.02 of the CARs, as well as the technical record requirements of section 571.03 and Division IV of Subpart 605 of the CARs.

(amended 2002/09/01)

(5) The training applicable to servicing may be limited to the procedures contained in the manufacturer's maintenance publications, servicing manuals, and similar documents. Where the standards used are not those specified by the manufacturer, they shall be listed in the MCM as required by section 706.08 of the CARs.

(amended 2002/09/01)

Information Notes:

(i) *It is advisable that the air operator also incorporate any applicable training requirements stemming from other national or provincial codes, affecting the handling of fuels and other dangerous goods, etc.*

(amended 2002/09/01).

(ii) *For administrative reasons, an air operator can establish many company procedures related to maintenance. The intent of the training requirements under this section is to address only those company procedures established in respect of the Canadian Aviation Regulations. Where flight crew members are appropriately trained, they may, where applicable, perform procedures identified as (M) items in the MEL, so long as the work does not constitute maintenance within the meaning of subsection 101.01(1) of the CARs, e.g. there is no disassembly and subsequent re-assembly of components that would require a maintenance release.*

(amended 2002/09/01)

(6) Until such time as it is revised through an assessment made in respect of the evaluation program, the initial cycle for update training shall not exceed three years.

(amended 2002/09/01)

(7) Where an air operator also holds an AMO certificate issued pursuant to section 573.02 of the CARs, the training required by section 706.12 of the CARs may be managed by means of its AMO training program provided that:

(amended 2002/09/01)

(a) there is a mention made to that effect in the MCM; and

(amended 2002/09/01)

(b) all the requirements specified in this section are covered in its AMO Maintenance Policy Manual approved pursuant to section 573.10 of the CARs.

(amended 2002/09/01)

726.13 Personnel Records

Information Notes:

(i) Pursuant to Section 706.13 of the Canadian Aviation Regulations the personnel records shall be retained for a period of not less than 2 years after an entry is made.

(ii) A list of authorizations issued pursuant to Subpart 706 of the Canadian Aviation Regulations requirements can be kept as a separate list from the MCM.

In the case where the list of authorizations is kept as a separate list from the MCM, the list shall be incorporated by reference in the MCM.

726.14 Service Difficulty Reporting

Information Notes:

(i) Each air operator is required to report service difficulties. These reports shall be submitted in the form and manner prescribed in Division IX of Subpart 521 of the Canadian Aviation Regulations.

(amended 2009/12/01)

(ii) Service difficulty reporting shall include defects detected during aircraft operation or during the performance of elementary work or servicing, and their recording.

(amended 2009/12/01)

**APPENDIX A - Fleet Empty Weight and Balance
Control Program**

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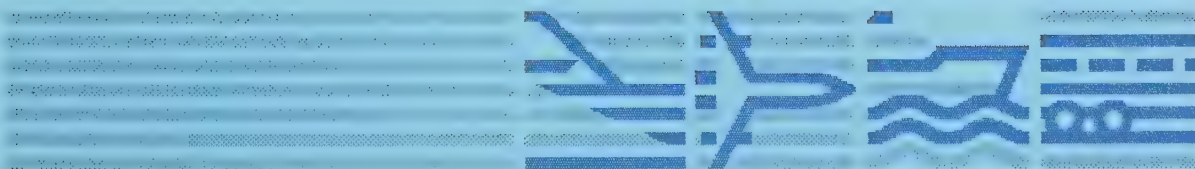
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***PART VIII
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PART VIII - AIR NAVIGATION SERVICES

SUBPART 0 - INTERPRETATION

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PART VIII - AIR NAVIGATION SERVICES

SUBPART 0 - INTERPRETATION

Interpretation

800.01 (1) In this Part,

(amended 2002/09/24)

“air traffic services” or “ATS” - includes air traffic control services, air traffic advisory services and flight information services; (*services de la circulation aérienne ou ATS*)

“ATS operations certificate” - ~~[Repealed]~~
(amended 2008/01/01)

“emergency assistance services” - means services provided for the purpose of

(a) assisting aircraft in a state of emergency, including aircraft in the uncertainty, alert and distress phases,

(b) assisting aircraft involved in a hijacking, or

(c) alerting rescue coordination agencies of missing or overdue aircraft; (*services d'urgence*)

(amended 2002/09/24)

“operational location” - means the physical location of an operational air traffic control unit or flight service station. (*emplacement opérationnel*)

(2) Any reference in this Part to an annex to the Convention includes the differences notified to ICAO by the Government of Canada in respect of the standards specified in that annex.

Application

800.02 This Part does not apply in respect of any air navigation services that are provided by or under the authority of the Minister of National Defence.

800.03 to 800.08 Reserved



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CANADIAN AVIATION REGULATIONS

PART VIII - AIR NAVIGATION SERVICES

SUBPART 1 - AIR TRAFFIC SERVICES

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PART VIII - AIR NAVIGATION SERVICES

SUBPART 1 - AIR TRAFFIC SERVICES

General

801.01 (1) No person shall act as an air traffic controller or a flight service specialist

(a) within eight hours after consuming alcohol;

(b) while under the influence of alcohol; or

(c) while under the influence of any drug or other substance that impairs the person's faculties to the extent that aviation safety is affected.

(2) No air traffic controller shall issue an air traffic control clearance or an air traffic control instruction except

(amended 2002/09/24)

(a) in the case of domestic airspace, in accordance with the *Canadian Domestic Air Traffic Control Separation Standards*; and

(b) in the case of international airspace in respect of which Canada has accepted, by means of a regional air navigation agreement, the responsibility of providing air navigation services, in accordance with the standards contained in Chapter 3 of Annex 11 to the Convention.

Services to Be Provided in Class A, B, C, D and E Airspace

801.02 (1) Where air traffic control services are provided to aircraft operating in Class A or Class B airspace, the services shall include separation between aircraft.

(2) Where air traffic control services are provided to aircraft operating in Class C airspace, the services shall include

(a) conflict resolution between IFR aircraft and VFR aircraft;

(b) conflict resolution between VFR aircraft on request;

(amended 2002/09/24)

(c) traffic information; and

(amended 2002/09/24)

(d) separation between IFR aircraft and between all aircraft during runway operations.

(amended 2002/09/24)

(3) Where air traffic control services are provided to aircraft operating in Class D airspace, the services shall include

- (a) traffic information; and
- (b) separation between IFR aircraft, and between all aircraft during runway operations.

(4) Where air traffic control services are provided to aircraft operating in Class E airspace, the services shall include separation between IFR aircraft.

Requirement for ATS Operations Certificate

801.03 No person shall operate an air traffic control unit or a flight service station unless the person holds and complies with the provisions of an ATS operations certificate that authorizes the person to operate the air traffic control unit or flight service station.

Application for ATS Operations Certificate

801.04 An applicant for an ATS operations certificate shall submit to the Minister

- (a) an application for an ATS operations certificate; and
- (b) a copy of the proposed ATS site manual for each operational location to be listed on the certificate.

Issuance of ATS Operations Certificate

801.05 (1) Subject to Section 6.71 of the Act, the Minister shall issue an ATS operations certificate to an applicant, authorizing the applicant to operate an air traffic control unit or a flight service station, if

- (a) the applicant demonstrates that
 - (i) it has personnel who are qualified to provide an air traffic service at the operational location of the air traffic control unit or flight service station, and
 - (ii) the air traffic control unit or flight service station will be operated in a manner that provides for safe aircraft operations; and
- (b) an ATS site manual for the operational location has been approved by the Minister.

(2) The Minister shall approve an ATS site manual if it

- (a) accurately describes the operational location of the air traffic control unit or flight service station; and
- (b) contains the information required pursuant to Section 801.07.

Contents of ATS Operations Certificate

801.06 An ATS operations certificate shall contain

- (a) the legal name, trade name and address of the holder of the certificate;
- (b) the number of the certificate;

- (c) the date of issue of the certificate;
- (d) the effective date of certification;
- (e) the types of air traffic services that the holder of the certificate is authorized to provide; and
- (f) a list of the operational locations for which an ATS site manual has been approved by the Minister.

Contents of ATS Site Manual

801.07 (1) An ATS site manual shall set out the types of air traffic services that are provided by the holder of the ATS operations certificate at that operational location.

(2) An ATS site manual shall contain

- (a) a table of contents;
- (b) any information relating to the administration of the air traffic control unit or flight service station, including
 - (i) a record of any amendments to the manual,
 - (ii) a list of the holders of copies of the manual,
 - (iii) a description of the procedure for amending the manual,
 - (iv) a description of the organizational structure of the air traffic control unit management or the flight service station management,
 - (v) a statement, signed by the holder of the ATS operations certificate, certifying that the manual is complete and accurate, and
 - (vi) a statement, signed by the Minister, indicating that the Minister has approved the manual;
- (c) any information relating to the operation of the air traffic control unit or flight service station, including
 - (i) a description of the airspace and its classification,
 - (ii) where applicable, a description of the manoeuvring area and the movement area of the airport, and
 - (iii) a description of a system to ensure that any operational information necessary for operational staff to perform their duties or functions is available on a daily basis;
- (d) in the case where air traffic advisory services or flight information services are provided, a description of the procedures for providing those services;
- (e) a description of the procedures for providing emergency assistance services;

(f) a copy of any agreements or memoranda of understanding relating to the operation of the air traffic control unit or flight service station; and

(g) in the case of an air traffic control unit or flight service station that is located at an airport, all information pertaining to the airport in respect of

- (i) emergency response measures,
- (ii) airport safety measures,
- (iii) access to the movement area and vehicle control procedures,
- (iv) apron management plans and apron safety plans, and
- (v) information services in respect of runway surface friction characteristics.

***Provision of Air Traffic Services in accordance
with ATS Site Manual***

801.08 No holder of an ATS operations certificate shall provide air traffic services at an operational location unless the services are provided in accordance with

(a) the ATS site manual; and

(b) in the case of air traffic control services, the *Canadian Domestic Air Traffic Control Separation Standards*.

***Training and Competency of Flight Service
Specialists***

801.09 (1) No holder of an ATS operations certificate who operates a flight service station shall permit a person to act, and no person shall act, as a flight service specialist unless the person

(a) has successfully completed

(amended 2008/01/01)

(i) training that has been accepted by the Minister in the performance of the functions of a flight service specialist; and

(amended 2008/01/01)

(ii) a safety-related initial training course on human and organizational factors, and

(amended 2008/01/01)

(b) has been certified by the holder of the certificate as being competent to perform those functions.

(2) Subsection (1) does not apply in respect of a person who, under supervision, acts as a flight service specialist while undergoing
(amended 2002/09/24)

- (a) instruction, training or testing in respect of flight service specialist certification; or
- (b) flight service station familiarization in the course of the person's employment.

(3) The holder of an ATS operations certificate who operates a flight service station shall
(amended 2002/09/24)

- (a) maintain, for each person who acts as a flight service specialist, a training record showing the place where and the date on which the person successfully completed the training referred to in paragraph (1)(a); and
- (b) at the request of the Minister, provide the Minister with a copy of the training record of any person acting as a flight service specialist at that flight service station.

***Provision of Air Traffic Services in Accordance
with the ESCAT Plan
(amended 2002/09/24)***

801.10 If the holder of an ATS operations certificate is notified by the Minister of National Defence of the implementation of the ESCAT plan, the certificate holder shall ensure that air traffic services are provided to aircraft in accordance with the contents of the plan.
(amended 2002/09/24)

801.11 to 801.15 Reserved



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SUBPART 2 - AERONAUTICAL TELECOMMUNICATIONS

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PART VIII - AIR NAVIGATION SERVICES

SUBPART 2 - AERONAUTICAL TELECOMMUNICATIONS

Interpretation

802.01 In this Subpart, “aeronautical telecommunications system” includes radio navigation aids and aeronautical communications systems.

Aeronautical Telecommunications Systems

802.02 (1) A person who operates any equipment that is part of an aeronautical telecommunications system referred to in Annex 10 to the Convention shall ensure that

(a) the equipment is installed, maintained and operated in accordance with the standards specified in Annex 10 to the Convention; and

(b) documentation is maintained that shows how compliance with the standards referred to in paragraph (a) is being achieved.

(2) No person shall perform a function related to the installation, maintenance or operation of any aeronautical telecommunications equipment unless the person has successfully completed training in the performance of that function and has been certified by the operator of the aeronautical telecommunications system as being competent to perform that function.

(3) A person who operates any ground equipment in support of satellite navigation systems shall ensure that

(a) the equipment is installed, maintained and operated in accordance with the standards specified in the manual entitled *GNSS IFR Operations*; and

(b) documentation is maintained that shows how compliance with the standards referred to in paragraph (a) is being achieved.

(4) A person who operates any equipment that is part of an aeronautical telecommunications system referred to in subsection (1) or (3) shall, at the request of the Minister, provide the Minister with a copy of the documentation referred to in paragraph (1)(b) or (3)(b).

802.03 to 802.07 Reserved



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PART VIII - AIR NAVIGATION SERVICES

SUBPART 3 - AERONAUTICAL INFORMATION SERVICES

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SUBPART 3 - AERONAUTICAL INFORMATION SERVICES

Provision of Aeronautical Information Services

803.01 (1) In this Subpart, “aeronautical information services” means the services necessary to meet the requirements of Annexes 4 and 15 to the Convention that relate to aeronautical information.

(amended 2002/09/24)

(2) No person shall provide aeronautical information services except in accordance with the standards set out in Annexes 4 and 15 to the Convention.

(amended 2002/09/24)

Development and Publication of Instrument Procedures

803.02 No person shall publish or submit for publishing in the *Canada Air Pilot* an instrument procedure unless the procedure has been developed

(a) in accordance with the standards and criteria specified in the manual entitled *Criteria for the Development of Instrument Procedures*; and

(b) by a person who has successfully completed training in the interpretation and application of the standards and criteria specified in the manual entitled *Criteria for the Development of Instrument Procedures*, which training has been accepted by the Minister.

803.03 to 803.08 Reserved



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SUBPART 4 - AVIATION WEATHER SERVICES AND ASSESSMENT OF RUNWAY VISIBILITY

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804 - AVIATION WEATHER SERVICES AND ASSESSMENT OF RUNWAY VISIBILITY

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PART VIII — AIR NAVIGATION SERVICES

SUBPART 4 — AVIATION WEATHER SERVICES AND ASSESSMENT OF RUNWAY VISIBILITY

(amended 2006/12/01)

DIVISION I — AVIATION WEATHER SERVICES

(amended 2006/12/01)

Provision of Aviation Weather Services

804.01 (1) Subject to Division III, a person who provides aviation weather services shall provide them in accordance with the standards specified in
(amended 2006/12/01)

(a) Annex 3 to the Convention;

(b) the *Manual of Standards and Procedures for Aviation Weather Forecasts*; and

(c) the *Manual of Surface Weather Observations*.

(2) For the purpose of paragraph (1)(a), the words “aerodrome” and “aircraft” used in Annex 3 to the Convention have the same meaning as in subsection 3(1) of the Act.
(amended 2006/12/01)

(3) For the purpose of paragraph (1)(a), the expressions “alternate aerodrome”, “control area” and “flight crew member” used in Annex 3 to the Convention have the same meaning as in subsection 101.01(1).
(amended 2006/12/01)

(4) For the purpose of paragraph (1)(a), the expressions “operator”, “runway visual range (RVR)” and “visibility” used in Annex 3 to the Convention have the same meaning as “air operator”, “RVR” or “runway visual range” and “runway visibility”, respectively, in subsection 101.01(1).
(amended 2006/12/01)

804.02 to 804.07 Reserved

**DIVISION II — METEOROLOGICAL
OBSERVATIONS MEASURED BY AUTOMATIC
INSTRUMENTATION OF WIND,
TEMPERATURE, HUMIDITY OR
ATMOSPHERIC PRESSURE**
(amended 2006/12/01)

804.08 to 804.21 Reserved

DIVISION III—RUNWAY VISIBILITY
(amended 2006/12/01)

Application

804.22 This Division applies to a person, other than a pilot who meets the requirements of section 602.131, who makes or reports an assessment of runway visibility at an aerodrome with the permission of the operator of the aerodrome.

Visibility Markers and Visibility Markers Charts

804.23 (1) The operator of an aerodrome shall establish visibility markers that meet the requirements of section 824.23 of Standard 824 — *Runway Visibility Assessment Standards*.

(2) The operator of an aerodrome shall produce a visibility markers chart that meets the requirements of section 824.23 of Standard 824 — *Runway Visibility Assessment Standards*.

***Person Qualified to Assess and Report Runway
Visibility***

804.24 Except for a pilot who meets the requirements of section 602.131, no person other than a person qualified in accordance with section 804.26 shall assess runway visibility and report the assessment.

Assessment and Reporting of Runway Visibility

804.25 (1) A person qualified to assess runway visibility shall obtain authorization to report an assessment of runway visibility from the operator of the aerodrome.

(2) A person qualified to assess runway visibility shall assess runway visibility and report the assessment in accordance with section 824.25 of Standard 824 — *Runway Visibility Assessment Standards*.

Qualifications and Training

804.26 A person who assesses runway visibility shall

- (a) have a distant visual acuity with or without correction of 6/12 (20/40) or better in each eye separately and binocular visual acuity of 6/9 (20/30) or better;
- (b) be qualified to operate a vehicle equipped with a two-way radio communication system on the manoeuvring area of the aerodrome; and
- (c) have received the training set out in section 824.26 of Standard 824 — *Runway Visibility Assessment Standards*.



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PART VIII - AIR NAVIGATION SERVICES

SUBPART 5 - SAFETY MANAGEMENT SYSTEM

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805 - SAFETY MANAGEMENT SYSTEM

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PART VIII - AIR NAVIGATION SERVICES

SUBPART 5 - SAFETY MANAGEMENT SYSTEM

amended 2008/01/01

Requirements

805.01 The safety management system required under section 107.02 in respect of an applicant for, or a holder of, an ATS operations certificate shall

(a) meet the requirements of Subpart 7 of Part I and section 805.02; and

(b) be under the control of the accountable executive appointed under paragraph 106.02(1)(a).

Components of the Safety Management System

805.02 (1) The safety management system shall include, among others, the following components:

(a) a safety management plan that includes

(i) a safety policy that the accountable executive has approved and communicated to all employees;

(ii) the roles and responsibilities of personnel assigned duties under the safety management system;

(iii) performance goals and a means of measuring attainment of those goals;

(iv) a policy for the internal reporting of hazards, incidents and accidents, including the conditions under which immunity from disciplinary action will be granted; and

(v) a process for reviewing the safety management system to determine its effectiveness;

(b) procedures for reporting hazards, incidents and accidents to the appropriate manager;

(c) procedures for the collection of data relating to hazards, incidents and accidents;

(d) procedures for the exchange of information in respect of hazards, incidents and accidents among the operators of aircraft and the provider of air traffic services at an airport and the airport operator;

(e) procedures for analysing data obtained under paragraph (c) and during an audit conducted under subsection 805.03(3) and for taking corrective actions;

(f) training requirements for the accountable executive and for personnel assigned duties under the safety management system;

(g) procedures for making progress reports to the accountable executive at intervals determined by the accountable executive and other reports as needed in urgent cases; and

(h) procedures for involving employees in the implementation and ongoing development of the safety management system.

(2) The components specified in subsection (1) shall be set out in a manual or another document established by the holder of the ATS operations certificate that includes

(a) a record of any amendments to the manual or document;

(b) a description of the procedures for amending the manual or document; and

(c) a statement, signed by the accountable executive, certifying that the manual or document is complete and its content accurate.

(3) The Minister shall approve the manual or document if it contains the information and statement required under subsection (2).

Quality Assurance Program

805.03 (1) The quality assurance program required under paragraph 107.03(g) in respect of an applicant for, or a holder of, an ATS operations certificate shall include a process for quality assurance that includes periodic reviews or audits of the activities authorized under a certificate and reviews or audits, for cause, of those activities.

(2) The holder of an ATS operations certificate shall ensure that records relating to the findings resulting from the quality assurance program are distributed to the appropriate manager for corrective action and follow-up in accordance with the policies and procedures specified in the manual or document established under subsection 805.02(2).

(3) The holder of an ATS operations certificate shall establish an audit system in respect of the quality assurance program that consists of the following:

(a) an initial audit conducted within 12 months after the day on which the ATS operations certificate is issued;

(b) an audit of the entire quality assurance program carried out every three years, calculated

(i) in the case of an ATS operations certificate issued before January 1, 2008, from that date, and

(ii) in the case of an ATS operations certificate issued on or after January 1, 2008, from the date of the initial audit;

(c) checklists of all activities carried out under the certificate.

(d) a record of each occurrence of compliance or non-compliance with the checklists in respect of the activities carried out under the certificate that is found during an audit referred to in paragraph (a) or (b);

(e) procedures for ensuring that each finding of an audit is communicated to the accountable executive;

(f) follow-up procedures for ensuring that corrective actions are effective; and

(g) a system for recording the findings of an audit referred to in paragraph (a) or (b), corrective actions and follow-ups.

(4) The audit referred to in paragraph (3)(b) shall be carried out in one of the following ways:

(a) as a complete audit; or

(b) as a series of audits conducted at intervals determined by the holder of the ATS operations certificate and set out in the manual or document established under subsection 805.02(2).

(5) The records resulting from a system required under paragraph (3)(g) shall be retained for the greater of:

(a) two audit cycles; and

(b) two years.

(6) The duties related to the quality assurance program that involve specific tasks or activities among the activities of an ATS operations certificate holder shall be fulfilled by persons who are not responsible for carrying out those tasks or activities unless:

(a) the size, nature and complexity of the operations and activities authorized under the ATS operations certificate justify the fulfilling of those duties by the person responsible for carrying out those tasks or activities;

(b) the holder of the ATS operations certificate demonstrates to the Minister by means of a risk analysis, that the fulfilling of those duties by the person responsible for carrying out those tasks or activities will not result in an unacceptable risk to aviation safety; and

(c) the holder of the ATS operations certificate provides the Minister, in writing, with the information required under paragraphs (a) and (b).

Duties of the Certificate Holder

805.04 The holder of an ATS operations certificate shall ensure that:

(a) corrective actions are taken in respect of any findings resulting from the safety management system referred to in section 805.01; and

(b) the accountable executive performs the duties prescribed in section 805.05.

Management of the Safety Management System

805.05 (1) The accountable executive shall

(a) establish and maintain a reporting system to ensure the timely collection of information related to hazards, incidents and accidents that may adversely affect safety;

(b) identify hazards and carry out risk management analyses of those hazards;

(c) investigate, analyze and identify the cause or probable cause of all hazards, incidents and accidents identified under the safety management system;

(d) establish and maintain a safety data system, by either electronic or other means, to monitor and analyze trends in hazards, incidents and accidents;

(e) monitor and evaluate the results of corrective actions with respect to hazards, incidents and accidents;

(f) monitor the concerns of the civil aviation industry in respect of safety and their perceived effect on the holder of the ATS operations certificate; and

(g) determine the adequacy of the training required by paragraph 805.02(1)(f).

(2) The accountable executive shall, if a finding resulting from a quality assurance program referred to in subsection 805.03(1) or a safety management system referred to in section 805.01 is reported to them:

(a) determine what, if any, corrective actions are required and carry out those actions;

(b) keep a record of any determination made under paragraph (a) and the reason for it;

(c) if management functions have been assigned to another person under subsection (3), communicate any determination regarding a corrective action to that person; and

(d) notify the certificate holder of any systemic deficiency and of the corrective action taken.

(3) The accountable executive may assign the management functions of the safety management system referred to in section 805.01 to another person if the assignment and its scope are described in the manual or document referred to in subsection 805.02(2).

(4) The person to whom management functions have been assigned under subsection (3) shall notify the accountable executive of any systemic deficiency and of the corrective action taken.

(5) The responsibility of the accountable executive is not affected by the assignment of management functions to another person under subsection (3).



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CANADIAN AVIATION REGULATIONS

PART VIII - AIR NAVIGATION SERVICES

SUBPART 6 - LEVELS OF SERVICE

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PART VIII - AIR NAVIGATION SERVICES

SUBPART 6 - LEVELS OF SERVICE

Interpretation

806.01 In this Subpart,

“aeronautical study” - means a study designed to identify the risks to aviation safety attendant upon a particular course of action and how to eliminate or reduce those risks; (*étude aéronautique*)

“level of service” - means the type or nature of civil air navigation services provided to support safe and efficient aircraft operations, and includes the times at which the services are provided. (*niveau de service*)

Maintenance of Level of Service

806.02 (1) Every person who provides a civil air navigation service shall, where the person proposes to terminate the service or to reduce the level of service that is provided, notify the Minister

(a) in the case of a proposal to terminate the service or to materially reduce the level of service, at least 60 days before the termination or reduction; and

(b) in all other cases, as far in advance of the reduction as reasonably practicable.

(2) On receipt of a notice referred to in subsection (1) from the ANS Corporation, the Minister may request the ANS Corporation to conduct an aeronautical study for the purpose of demonstrating that the risk to aviation safety would not be unacceptably increased by the proposed termination or reduction in the level of service.

(3) Where the Minister requests the ANS Corporation to conduct an aeronautical study pursuant to subsection (2), the ANS Corporation shall not implement the proposed termination or reduction in the level of service until the Minister has been provided with a copy of the study and has had a reasonable opportunity to review it.

(4) Where, after reviewing an aeronautical study conducted pursuant to subsection (2), the Minister is of the opinion that an unacceptable risk to aviation safety would result from the proposed termination or reduction in the level of service, the Minister may, by order, direct the ANS Corporation to maintain its level of service in accordance with the terms and conditions specified in the order.

Increase in Level of Service

806.03 Where, after conducting an aeronautical study or reviewing an aeronautical study conducted by another person or organization, the Minister is of the opinion that the level of service provided by the ANS Corporation should be increased in the interests of aviation safety, the Minister may, by order, direct the ANS Corporation to increase its level of service in accordance with the terms and conditions specified in the order.

806.04 to 806.08 Reserved



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CANADIAN AVIATION REGULATIONS

PART VIII - AIR NAVIGATION SERVICES

SUBPART 7 - AVIATION OCCURRENCES

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PART VIII - AIR NAVIGATION SERVICES

SUBPART 7 - AVIATION OCCURRENCES

Reporting of Aviation Occurrences

807.01 The holder of an ATS operations certificate shall report to the Minister any aviation occurrence information specified in the CADORS Manual in accordance with the criteria and reporting procedures specified in that manual.

807.02 to 807.06 Reserved



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CANADIAN AVIATION REGULATIONS

PART VIII - AIR NAVIGATION SERVICES

STANDARD 821 – CANADIAN DOMESTIC AIR TRAFFIC CONTROL SEPARATION

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STANDARD 821 – CANADIAN DOMESTIC AIR TRAFFIC CONTROL SEPARATION

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Foreword

This document contains the *Canadian Domestic Air Traffic Control Separation Standards* to be used by Air Traffic Control personnel in the control of VFR, CVFR and IFR aircraft in Canadian domestic airspace.

A symbol inserted in the text of this document indicates that explanatory or reference material has been included and are indicated as follows:

(a) *(N)* - note; and

(b) *(R)* - reference.

PART VIII - AIR NAVIGATION SERVICES

STANDARD 821 - CANADIAN DOMESTIC AIR TRAFFIC CONTROL SEPARATION

Definitions

- “airport control service” - The control service provided by airport control towers to airport traffic.
- “altitude” - The altitude indicated on an altimeter, set in accordance with the requirements specified in the *Canadian Aviation Regulations* (CARs), sections 602.35, 602.36 and 602.37.
- “altitude reservation” - An airspace of defined dimensions within controlled airspace, reserved for the use of a civil or military agency during a specified period. An altitude reservation may be confined to a fixed area (stationary) or moving in relation to the aircraft that operate within it (moving).
- “area navigation” - A method of navigation that permits aircraft operations on any desired track within the coverage of station-referenced navigation signals, or within the limits of a self-contained navigation system.
- “common point” - A single fix, whether a NAVAID, a fix derived from NAVAIDs, or geographical coordinates expressed in degrees of latitude and longitude, over which two or more aircraft will pass, or have passed, before proceeding on the same track or diverging tracks.
- “conflict resolution” - The resolution of potential conflicts between IFR/VFR and VFR/VFR aircraft that are radar identified and in communication with ATC.
- “controlled airport” - An airport at which an airport control service is provided.
- “controlled VFR flight” - A flight conducted under the visual flight rules within Class B Airspace and in accordance with an air traffic control clearance.
- “fix” - A geographical location determined either by visual reference to the ground, or by means of radio aids or other navigational devices.
- “flight level” or “FL” - An altitude expressed in hundreds of feet, indicated on an altimeter set to 29.92 inches of mercury or 1013.2 millibars.
(amended 2002/12/01)

“heavy aircraft” - In respect of aircraft wake turbulence weight categories, means an aircraft certificated for a maximum take-off weight of 136 000 kilograms (300,000 pounds) or more.

(amended 2006/12/30)

“identification” - The situation which exists when the position indication of a particular aircraft is seen on a situation display and positively identified.

(amended 2011/06/30)

“lateral separation” - The lateral spacing of aircraft.

“light aircraft” - In respect of aircraft wake turbulence weight categories, means an aircraft certificated for a maximum take-off weight of 7 000 kilograms (15,500 pounds) or less.

(amended 2006/12/30)

“longitudinal separation” - The longitudinal spacing of aircraft expressed in time or distance.

“mach-number technique” - The assignment by ATC of Mach-number values to aircraft that are in level flight, climbing or descending, in order to ensure that longitudinal separation is maintained.

“MARSA” A term used, whereby the military command/pilots involved, assume responsibility for separation of participating aircraft.

“medium aircraft” - In respect of aircraft wake turbulence weight categories, means an aircraft certificated for a maximum take-off weight of more than 7 000 kilograms (15,500 pounds), but less than 136 000 kilograms (300,000 pounds).

(amended 2006/12/30)

“NAVAID” Unless use of another navigation system is specifically authorized, this term means an NDB, VOR, TVOR, VORTAC, DME, VOR/DME, or TACAN.

“no transgression zone” - A corridor of airspace of defined dimensions, located centrally between the two extended runway centre lines, where controller intervention is required to manoeuvre the non-blundering aircraft, when the airspace is penetrated by an aircraft conducting a simultaneous approach to the adjacent parallel or near-parallel instrument runway.

“normal operating zone” - Airspace of defined dimensions, extending to either side of an ILS localizer centre line. Only the inner half of the normal operating zone is taken into account in independent approaches.

“reciprocal track” - A term used in the application of separation, indicating tracks that converge or diverge at an angle of 136 degrees to 180 degrees inclusive.

“Reduced Vertical Separation Minimum” or “RVSM” – the 1,000 feet vertical separation that is applied at and above FL 290, between RVSM certified aircraft operating in RVSM airspace or in an RVSM Transition Area.

(amended 2002/12/01)

“RVSM airspace” – The airspace specified, and delineated as such, in the *Designated Airspace Handbook*.

(amended 2002/12/01)

- “RVSM Transition Area” – The airspace specified, and delineated as such, in the *Designated Airspace Handbook*.
(amended 2002/12/01)
- “same track” - A term used in the application of separation, indicating identical tracks or tracks that converge or diverge at an angle of 1 degree to 44 degrees inclusive.
- “separation” - Spacing between aircraft, altitudes, or tracks.
- “separation minimum” - A statement of the least allowable amount of lateral, longitudinal, or vertical separation to be applied.
- “straight-in approach (IFR)” - An instrument approach in which final approach is begun without first having executed a procedure turn.
- “straight-in approach (VFR)” - An approach in which the traffic circuit is entered on the final leg, without having executed any other part of the circuit.
- “target/PPS resolution” - In the application of radar separation, an action to ensure that radar targets do not touch.
- “track” - The projection on the earth’s surface of the path of an aircraft, the direction of which path, at any point, is usually expressed in degrees from North (true, magnetic, or grid).
- “traffic information” - Information issued to advise pilots of known or observed air traffic which may be in such proximity to their position or intended route of flight to warrant their attention.
- “vertical separation” - The vertical spacing of aircraft.
- “visual approach” - A procedure wherein an aircraft on an IFR flight plan, operating in VFR weather conditions under the control of an air traffic control facility and having an air traffic control authorization, may proceed to the airport of destination in VFR weather conditions.
- “visual separation” - A means employed by controllers to separate aircraft operating in VMC.
- (a) “VFR” - The controller having determined that a potential conflict exists, issues clearances, instructions and/or information, as necessary in order to either aid aircraft in establishing visual contact with each other or to assist aircraft in avoiding other aircraft.
- (b) “IFR” or “CVFR” - Following a pilot’s report that the traffic is in sight, the controller issues the clearance and instructs the pilot to provide his/her own separation by manoeuvring the aircraft as necessary to avoid or follow the traffic.
- “VFR flight” - A flight conducted in accordance with the Visual Flight Rules.

“wake turbulence” - The turbulent air behind an aircraft caused by any of the following:

- (a) wing-tip vortices;
- (b) rotor-tip vortices;
- (c) jet-engine thrust stream;
- (d) rotor downwash; or
- (e) prop wash.

Abbreviations

ACA	Arctic Control Area
A.I.P.	Aeronautical Information Publication
ALTRV	Altitude Reservation
ALTRV APVL	Altitude Reservation Approval
ASL	Above Sea Level
AVANA	Approval Void if Aircraft Not Airborne by (time)
CMNPS	Canadian Minimum Navigation Performance Specifications
CVFR	Controlled VFR
DCPC	Direct Controller - Pilot Communications
DME	Distance Measuring Equipment
ETD	Estimated Time of Departure
IFR	Instrument Flight Rules
ILS	Instrument Landing System
MVA	Minimum Vectoring Altitude
NOZ	Normal Operating Zone
NTZ	No Transgression Zone
OMNI	Omnirange
PPS	Present Position Symbol
RDPS	Radar Data Processing System
RNAV	Area Navigation
RNPC	Required Navigation Performance Capability
RSE	Radar Site Equipment
VFR	Visual Flight Rules

CHAPTER 1 - VISUAL SEPARATION

1.0 *Successive IFR Departures from the Same Runway*

1.1 The following conditions shall be met when using visual separation to release successive IFR aircraft departing from the same runway:

- (a) visual observation confirms that the preceding IFR aircraft has departed and has turned to clear the departure path of the succeeding aircraft, or has reached a point on its departure path where it will no longer conflict with the departure path of the succeeding aircraft;
- (b) initial departure tracks diverge by 30 degrees or more;
- (c) traffic information is passed to the succeeding aircraft;
- (d) applicable wake turbulence minima are complied with, unless waived by the succeeding aircraft.

2.0 *Arrivals and Departures*

2.1 **Separation of an Arriving Aircraft from a Preceding Aircraft**

An arriving aircraft shall be separated from a preceding aircraft using the same runway by ensuring that the arriving aircraft does not cross the landing threshold until one of the following conditions exists:

- (a) the preceding aircraft has landed and taxied off the runway;
- (b) the preceding aircraft has landed or is over the landing runway and:
 - (i) is at a distance from the threshold sufficient to allow the arriving aircraft to complete its landing roll without jeopardizing safety, and
 - (ii) the arriving aircraft is advised of the preceding aircraft's position and intentions;
- (c) the preceding aircraft is airborne and:
 - (i) is at a sufficient distance from the threshold that the arriving aircraft will not overtake it during the landing roll or conflict with it in the event of a missed approach, or
 - (ii) has turned to avoid any conflict with the arriving aircraft in the event of a missed approach.

2.2 Separation of a Departing Aircraft from a Preceding Aircraft

A departing aircraft shall be separated from a preceding aircraft using the same runway by ensuring that it does not begin take-off roll until one of the following conditions exists:

- (a) the preceding aircraft has landed and taxied off the runway, or there is every assurance that it will vacate the runway by the time the departure starts the take-off roll;
- (b) the preceding aircraft has departed and:
 - (i) has turned to clear the departure path, or
 - (ii) has reached a point on the departure path where it will not conflict with the succeeding aircraft.

2.3 Separation of an Arriving Aircraft from Aircraft using Intersecting Runway

An arriving aircraft shall be separated from another aircraft using an intersecting runway, or non-intersecting runway if flight paths intersect, by ensuring that the arriving aircraft does not cross the landing threshold or flight path of the other aircraft until one of the following conditions exists:

- (a) a preceding departing aircraft has:
 - (i) passed the intersection or flight path, or
 - (ii) turned to avoid any conflict.
- (b) a preceding arriving aircraft has:
 - (i) taxied off the landing runway,
 - (ii) completed the landing roll and will hold short of the intersection or flight path, or
 - (iii) passed the intersection or flight path.

2.4 Separation of a Departing Aircraft from Aircraft using Intersecting Runways

A departing aircraft shall be separated from an aircraft using an intersecting runway, or non-intersecting runway if flight paths intersect, by ensuring that the departing aircraft does not begin its take-off roll until one of the following conditions exists:

- (a) a preceding departing aircraft has:
 - (i) passed the intersection,
 - (ii) crossed the departure runway, or
 - (iii) turned to avoid any conflict.
- (b) a preceding arriving aircraft has:
 - (i) taxied off the landing runway,
 - (ii) completed the landing roll and will hold short of the intersection,

- (iii) passed the intersection, or
- (iv) crossed over the departure runway.

2.5 Separation of Taxiing Aircraft from Aircraft using the Runway

Taxiing aircraft shall be held until traffic using the runway has passed the point at which the aircraft is holding:

- (a) at a taxi holding position, if one has been established;
- (b) at least 200 feet from the edge of the runway, unless other holding positions are established by markings or signs; or
- (c) at a sufficient distance from the edge of the runway to ensure that no hazard is created to arriving or departing aircraft, if it is not possible to comply with (a) or (b).

2.6 Separation of Pedestrians and Vehicles from Aircraft using the Runway

Ground traffic such as pedestrians, vehicles, or construction equipment shall be kept away from taxiing aircraft by holding ground traffic:

- (a) at least 200 feet from the edge of an active runway, unless other holding positions are established by markings or signs; or
- (b) at a sufficient distance from the edge of the runway to ensure that no hazard is created to arriving or departing aircraft, if it is not practicable to comply with (a).

3.0 Wake Turbulence

3.1 Separation Minima for Wake Turbulence

3.1.1 Two minutes separation shall be applied to any category aircraft that takes off into the wake of a known heavy aircraft on:

- (a) the same runway; or
- (b) a parallel runway less than 2,500 feet away.

3.1.2 Three minutes separation shall be applied to any category aircraft that takes off into the wake of a known heavy aircraft or a light aircraft that takes off into the wake of a medium aircraft if:

- (a) the following aircraft starts its take-off roll from an intersection or a point significantly further along the runway, in the direction of take-off, than the preceding aircraft; or
- (b) the controller has reason to believe that rotation may occur beyond the rotation point of the preceding aircraft.

3.1.3 If the projected flight paths will cross, 2 minutes separation shall be applied to any category aircraft that takes off behind a heavy aircraft that has taken off or is flying a low or missed approach on:

- (a) a crossing runway; or
- (b) a parallel runway 2,500 feet or more away.

3.1.4 If aircraft utilize the same runway or a parallel runway less than 2,500 feet away, 3 minutes separation shall be applied to any category aircraft that takes off after a heavy or heavier category aircraft has overflown the runway in the same or opposite direction.

4.0 Radar Service

4.1 Separation Minima

4.1.1 In the provision of separation or conflict resolution, aircraft shall be separated vertically by a minimum of 500 feet unless additional separation is required for wake turbulence.

4.1.2 When providing separation or conflict resolution using tower radar, target resolution separation shall be applied provided that:

- (a) at least one of the aircraft is VFR;
- (b) altitude information is displayed for both aircraft; or
- (c) if altitude information is not displayed on both aircraft, the aircraft are 3,000 feet Above Airport Elevation or below; and
- (d) Present Position Symbols (PPSs) do not touch.

CHAPTER 2 - AREA AND TERMINAL SEPARATION

1.0 *Separation Between Flight Levels and Altitudes ASL*

1.1 A flight level shall not be assigned that is lower than the lowest usable flight level determined from the following table:

If the Altimeter Setting is	Then the Lowest Usable Flight Level is
29.92 or higher	FL180
29.91 to 28.92	FL190
28.91 to 27.92	FL200
27.91 or lower	FL210

1.2 The lowest assignable flight level that will ensure at least the required vertical separation minimum between an aircraft flying on the standard pressure setting and:

- (a) an aircraft flying on an altimeter setting; or
 - (b) the upper limit of Class F airspace, if the upper limit is defined in terms of altitude;
- shall be determined using the following table:

If the Aircraft Flying on the Standard Pressure Setting is at	And if the Altimeter Setting is	Then the Separation Required is
FL290 or below	29.92 or higher	1,000 feet
	29.91 to 28.92	2,000 feet
	28.91 to 27.92	3,000 feet
	27.91 or lower	4,000 feet
Above FL290	29.92 or higher	2,000 feet
	29.91 to 28.92	3,000 feet
	28.91 to 27.92	4,000 feet
	27.91 or lower	5,000 feet

1.3 The vertical separation to be applied between aircraft flying on an altimeter setting and the lower limit of Class F airspace, if the lower limit is defined in terms of flight level, shall be determined using the following table:

If the Altimeter Setting is	Vertical Separation Required
29.92 or higher	1,000 feet
29.91 to 28.92	2,000 feet
28.91 to 27.92	3,000 feet
27.91 or lower	4,000 feet

2.0 Provision of Area and Terminal Separation

2.1 Separation need not be applied where:

- (a) an aircraft has been authorized to maintain “at least 1,000 feet on top”, except:
 - (i) at night, separation shall be applied between an aircraft maintaining “at least 1,000 feet on top” and other aircraft if any of the aircraft are holding, and
 - (ii) between an aircraft maintaining “at least 1,000 feet on top” and an aircraft operating on an ALTRV APVL;
- (b) a VFR restriction has been applied to an aircraft climbing or descending en route or to a departing aircraft; or
- (c) control of an arriving aircraft has been transferred to the tower.

3.0 Vertical Separation

3.1 Aircraft shall be separated vertically by

(amended 2002/12/01)

- (a) 1,000 feet;
(amended 1997/03/31)
 - (i) where the aircraft are operated at or below FL290; or
(amended 2002/12/01)
 - (ii) where both aircraft are RVSM certified and operating within designated RVSM airspace or an RVSM transition area; or
(amended 2002/12/01)
- (b) 2,000 feet, where the aircraft are operated above FL290.
(amended 2002/12/01)

3.2 Vertical separation shall be applied between aircraft on reciprocal tracks from 10 minutes before until 10 minutes after their estimated passing time.

3.3 The following conditions shall be met when discontinuing vertical separation between aircraft on reciprocal tracks:

- (a) both aircraft have reported by the same NAVAID and, if at FL180 or above, are 2 minutes apart;
- (b) both aircraft have reported passing the same OMNI radial at an angle of 45 degrees or more and are:
 - (i) 2 minutes apart if 25 miles or less from the NAVAID producing the radial, or
 - (ii) 4 minutes apart if more than 25 miles from the NAVAID producing the radial;

(c) both aircraft are using the same DME and position reports indicate that they have passed and are 5 miles apart, provided the outbound aircraft is 15 miles or more from the DME facility;

(d) both aircraft are below FL180 and both have reported passing each other, or both have reported passing the same visual fix;

(e) both aircraft are in Class A airspace, are separated vertically by not more than 2,000 feet, and both aircraft report visual confirmation that they have passed each other.

3.4 Unless lateral separation exists, vertical separation shall be applied to an en route aircraft before and after the outer edge of the protected airspace, for a holding aircraft, or an aircraft on an instrument approach procedure, for the following time period:

(a) 15 minutes;

(b) 10 minutes, provided that NAVAID coverage permits determination of position and speed at intervals not exceeding 40 minutes flying time.

3.5 The following conditions shall be met when discontinuing vertical separation between an en route aircraft and a holding aircraft or an aircraft on an instrument approach procedure:

(a) the aircraft has reported over a fix within the appropriate protected airspace; and

(b) the aircraft is at least 5 minutes from the outer edge of the holding or approach area.

4.0 Lateral Separation

4.1 Aircraft shall be separated laterally by ensuring that the following protected airspaces do not overlap:

(a) holding areas;

(b)

(i) low-level airways, and

(ii) the airspace to be protected, including additional protected airspace for change of direction, for:

(A) high-level airways, and

(B) off-airway tracks;

(c) initial, intermediate, final, missed approach and departure areas.

4.2 Aircraft shall be considered geographically separated if one aircraft is over a location whose fix tolerance area does not overlap:

(a) the fix tolerance area for other aircraft over different geographical locations; or

(b) the protected airspace for other aircraft.

4.3 An aircraft that is proceeding away from protected airspace shall be considered geographically separated when it has reported crossing a radial that:

- (a) provides at least 5 degrees clearance from the area of overlap; and
- (b) intersects the track of the traversing aircraft at an angle of at least 45 degrees.

4.4 For aircraft turns of 16 degrees or more, the overflown side of the track shall be protected as follows:

- (a) for turns of 16 degrees through 90 degrees:
 - (i) 14 miles from FL180 to FL230 inclusive, or
 - (ii) 17 miles above FL230;
- (b) For turns of 91 degrees through 180 degrees, in addition to the 14/17 of a mile protected on the overflown side of the track, protect:
 - (i) 28 miles from FL180 to FL230 inclusive on the manoeuvring side of the track, or
 - (ii) 34 miles above FL230 on the manoeuvring side of the track.

4.5 DME Lateral Separation shall be applied by one of the following minima:

- (a) between aircraft maintaining specified arcs of the same NAVAID:
 - (i) 20 miles, or
 - (ii) 10 miles, provided that both aircraft are 35 miles or less from the NAVAID;
- (b) between an aircraft that is maintaining a specified arc of a NAVAID and the outer-edge of protected airspace for other aircraft:
 - (i) 10 miles; or
 - (ii) 5 miles, provided that the aircraft maintaining the specified arc is 35 miles or less from the NAVAID.

4.6 OMNI-Track Separation shall be applied by establishing aircraft on different specified radials of the same OMNI facility by the following minima:

- (a) 30 degrees between:
 - (i) same direction, departing, outbound aircraft that are 15 miles or less from the facility,
 - (ii) same direction, en route, outbound aircraft that are 15 miles or less from the facility, provided that the aircraft are 3 minutes or more from the facility;

(b) 15 degrees between:

- (i) same direction, outbound aircraft provided that at least one aircraft is more than 15 miles from the facility,
- (ii) same direction, inbound aircraft provided that the second aircraft is more than 15 miles, and 10 minutes or more, from the facility,
- (ii) opposite direction aircraft provided that:
 - (A) they will pass at a point more than 15 miles from the facility, or
 - (B) the outbound aircraft is more than 15 miles from the facility.

4.7 For aircraft operating on the same or reciprocal tracks:

(a) vertical separation shall be maintained until an aircraft diverging from an area of overlap, at an angle less than 45 degrees, is separated from the area of overlap by the greater of:

- (i) 5 minutes, or
- (ii) half the longitudinal separation minimum applicable; or

(b) vertical separation shall be established before an aircraft converging to an area of overlap, at an angle of less than 45 degrees, reaches a point that is separated from the area of overlap by the greater of:

- (i) 5 minutes, or
- (ii) half the longitudinal separation minimum applicable.

5.0 Longitudinal Separation

Where separation standards are applied using DME, DCPC shall be established.

5.1 Aircraft on the same track shall be separated by one of the following minima:

- (a) 15 minutes;
- (b) 10 minutes, provided that NAVAID coverage permits determination of position and speed at intervals not exceeding 40 minutes flying time;
- (c) 5 minutes between:
 - (i) aircraft that have departed from adjacent locations and have reported over the same reporting point,
 - (ii) en route aircraft that have reported over the same reporting point, or
 - (iii) a departed aircraft behind an en route aircraft that has reported over the reporting point serving the point of departure,

provided that, in each case, the leading aircraft is maintaining a speed that is 20 or more knots faster than the following aircraft and NAVAID coverage permits determination of position and speed at intervals not exceeding 40 minutes flying time;

(d) 3 minutes between:

- (i) aircraft that have departed from adjacent locations and have reported over the same reporting point,
- (ii) en route aircraft that have reported over the same reporting point; or
- (iii) a departed aircraft behind an en route aircraft that has reported over the reporting point serving the point of departure,

provided that, in each case, the leading aircraft is maintaining a speed that is 40 or more knots faster than the following aircraft and NAVAID coverage permits determination of position and speed at intervals not exceeding 40 minutes flying time.

5.2 Aircraft on the same track using DME shall be separated by one of the following minima:

(a) 20 miles;

(b) 10 miles between:

- (i) aircraft that have departed from adjacent locations and have reported over the same reporting point,
- (ii) en route aircraft that have reported DME in relation to the same facility, or
- (iii) a departed aircraft behind an en route aircraft that has reported over the reporting point serving the point of departure,

provided that, in each case, the leading aircraft is maintaining a speed that is 20 or more knots faster than the following aircraft;

(c) 5 miles between:

- (i) aircraft that have departed from adjacent locations and have reported over the same reporting point,
- (ii) en route aircraft that have reported DME in relation to the same facility, or
- (iii) a departed aircraft behind an en route aircraft that has reported over the reporting point serving the point of departure,

provided that, in each case, the leading aircraft is maintaining a speed that is 40 or more knots faster than the following aircraft.

5.3 Aircraft on the same track, at the time that altitude levels are crossed, shall be separated by one of the following minima: *(N)*

(a) minima specified in Chapter 2, section 5.1 or 5.2;

(b) 5 minutes, provided that:

(i) the altitude change is commenced not later than 10 minutes after the following aircraft has reported over the reporting point used by the leading aircraft,

(ii) the leading aircraft is descending through the altitude of the following aircraft or the following aircraft is climbing through the altitude of the leading aircraft, and

(iii) the vertical separation at the time of commencement of change is 4,000 feet or less;

(c) 10 miles, provided that:

(i) both aircraft are using DME,

(ii) DCPC is established, and

(iii) the leading aircraft is descending through the altitude of the following aircraft or the following aircraft is climbing through the altitude of the leading aircraft;

(d) 10 miles, if DCPC is not established, provided that:

(i) both aircraft are using the same DME facility,

(ii) the leading aircraft is 20 knots faster than the following aircraft,

(iii) the leading aircraft is descending through the altitude of the following aircraft or the following aircraft is climbing through the altitude of the leading aircraft,

(iv) the vertical separation at the commencement of change is 4,000 feet or less, and

(v) the position of the lead aircraft is determined before that of the following aircraft.

NOTE:

Except as otherwise allowed for in Chapter 2, section 5.3(d), whenever aircraft are separated using DME, DCPC will be established.

5.4 Aircraft on crossing tracks shall be separated by one of the following minima:

(a) 15 minutes;

(b) 10 minutes, provided that NAVAID coverage permits determination of position and speed at intervals not exceeding 40 minutes flying time;

(c) 20 miles, provided that both aircraft are using the same DME and the tracks cross at the NAVAID;

(d) 10 miles provided both aircraft are using the same DME, the tracks cross at the NAVAID and the leading aircraft is maintaining a speed that is 20 or more knots faster than the following aircraft.

6.0 Initial Departure Separation

6.1 Separation minima contained in this subsection may be applied until another separation minimum is established, where:

- (a) if aircraft depart from the same runway, the leading aircraft shall not be authorized to turn in either direction, to a track that is more than 135 degrees from the extended runway centre line; or
- (b) if aircraft depart from different runways, the leading aircraft shall not be authorized to turn:
 - (i) toward the extended centre line of the runway to be used by the following aircraft, and
 - (ii) in the other direction to a track that is more than 135 degrees from the extended centre line of the runway to be used by the following aircraft.

6.2 The following conditions shall be met when a departing aircraft is separated from other departing aircraft by one of the following minima:

- (a) 5 minutes, until altitude levels are crossed provided that:
 - (i) the following aircraft will climb through the altitude of the leading aircraft, and
 - (ii) both aircraft follow the same track until vertical separation is established;
- (b) 5 minutes, provided that: (R)
 - (i) the leading aircraft will maintain a speed that is 20 or more knots faster than the following aircraft, and
 - (ii) NAVAID coverage permits determination of position and speed at intervals not exceeding 40 minutes flying time;

Reference: *Section 602.32 of the Canadian Aviation Regulations - Airspeed Limitations*

- (c) 3 minutes, provided that: (R)
 - (i) the leading aircraft will maintain a speed that is 40 or more knots faster than the following aircraft, and
 - (ii) NAVAID coverage permits determination of position and speed at intervals not exceeding 40 minutes flying time;

Reference: *Section 602.32 of the Canadian Aviation Regulations - Airspeed Limitations*

(d) 3 minutes, until tracks diverge provided that:

- (i) both aircraft will follow the same track initially and then assigned tracks that diverge by 45 degrees or more, and
- (ii) the tracks diverge not later than 5 minutes after the second aircraft takes off;

(e) 3 minutes, until altitude levels are crossed provided that:

- (i) prior to reaching 15 miles from the departure runway, the following aircraft will climb through the altitude of the leading aircraft, and
- (ii) both aircraft will follow the same track until vertical separation is established;

(f) 1 minute, until tracks diverge provided that:

- (i) both aircraft will follow assigned tracks that diverge by 45 degrees or more; and
- (ii) the tracks diverge as soon as practicable after take-off; (IV)

(g) 10 miles, until altitude levels are crossed provided that:

- (i) the following aircraft will climb through the altitude of the leading aircraft, and
- (ii) both aircraft use DME and follow the same track to or from the same DME NAVAID immediately after take-off;

(h) 5 miles, provided that:

- (i) other separation will be established not later than the time the following aircraft reaches a point 15 miles from the departure runway, and
- (ii) both aircraft use DME and follow the same track to or from the same DME NAVAID immediately after take-off.

NOTE 1:

This minimum shall only be applied if the following conditions exist:

- (a) *if the speed of a following aircraft will exceed that of a leading aircraft, the leading aircraft is turned. A following aircraft is not authorized to depart until the leading aircraft has commenced the turn;*
- (b) *if the speed of the following aircraft will not exceed that of a leading aircraft:*
 - (i) *either aircraft is turned as soon as practicable, or*
 - (ii) *both aircraft are turned as soon as practicable such that the angle between their tracks equals 45 degrees or more.*

NOTE 2:

Successive aircraft are not authorized to turn toward the same side of the extended runway centre line.

NOTE 3:

No other applications are authorized.

6.3 The following conditions shall be met when simultaneous take-offs from parallel runways are authorized:

- (a) the runways are 4,300 feet or more apart (centre line to centre line);
- (b) neither aircraft will turn towards the other runway;
- (c) both aircraft will follow assigned tracks that diverge by 45 degrees or more immediately after take-off; and
- (d) traffic information is passed to both aircraft.

6.4 The following conditions shall be met when simultaneous take-offs from non-intersecting runways are authorized:

- (a) the runways diverge by 30 degrees or more;
- (b) neither aircraft will turn toward the other runway; and
- (c) the aircraft will fly assigned tracks that diverge by 45 degrees or more immediately after take-off.

6.5 The following conditions shall be met when a succeeding aircraft is authorized to take-off behind another aircraft departing from an intersecting runway:

- (a) the runways diverge by 30 degrees or more;
- (b) the preceding aircraft has passed the point of runway intersection;
- (c) neither aircraft will turn toward the other runway; and
- (d) the aircraft will fly assigned tracks that diverge by 45 degrees or more immediately after take-off.

6.6 Provided the airspace to be protected for the departure areas do not overlap, take-offs may be permitted in any direction.

6.7 The following conditions shall be met when a departing aircraft is authorized to take-off while an arriving aircraft is on an instrument approach to the same airport:

(a) in any direction, provided it will have a minimum of 5 minutes separation from an arriving aircraft on a straight-in approach, at the point where it will alter its heading to diverge from the reciprocal of the final approach track of the arriving aircraft by a minimum of:

(i) 45 degrees, or

(ii) 30 degrees, provided that both the arriving and departing aircraft will use a facility located on the airport that provides track guidance in the form of an OMNI radial or an ILS front or back beam; or

(b) in a direction that differs from the reciprocal of the final approach track of the arriving aircraft by a minimum of 45 degrees, except when an arriving aircraft will make a procedure turn, in which case the minimum is increased to 90 degrees on the procedure turn side of the final approach track, provided that the departing aircraft is airborne:

(i) before the arriving aircraft is estimated to be not less than 3 minutes from the instrument runway; or (N)

NOTE 1:

The 90 degree minimum may be reduced to 45 degrees on the procedure turn side of the final approach track where the protected airspace associated with the departure procedure does not overlap the airspace to be protected for the initial approach area.

NOTE 2:

This minimum shall only be applied if:

(a) *the arriving aircraft is making a straight-in approach; or*

(b) *the fix from which the procedure turn is commenced is located between the procedure turn and approach end of the instrument runway.*

(ii) before the arriving aircraft leaves a fix inbound not less than 4 miles from the instrument runway. (N)

NOTE 1:

The 90 degree minimum may be reduced to 45 degrees on the procedure turn side of the final approach track where the protected airspace associated with the departure procedure does not overlap the airspace to be protected for the initial approach area.

NOTE 2:

This minimum shall only be applied if an airport control service is being provided.

7.0 Separation from Class F Airspace

7.1 Separation shall be applied between an aircraft and the outer edge of Class F airspace, except if:

- (a) the aircraft states that it has obtained permission from the user agency to enter the airspace;
- (b) the aircraft is operating on an ALTRV APVL; or
- (c) the aircraft has been cleared for a contact or visual approach.

7.2 500 feet vertical separation shall be applied from an active Class F advisory airspace, unless wake turbulence minima is applicable, in which case 1,000 feet vertical separation shall be applied.

8.0 Separation from Photographic Survey Aircraft

8.1 Airspace in the following dimensions shall be protected for photographic survey aircraft that are operating on specific flights in accordance with CVFR or IFR:

- (a) 4 miles each side of tracks; and
- (b) 4 miles beyond the end of the flight line for aircraft below FL180 to complete a turn from one flight line to another or the appropriate minima for aircraft turning at or above FL180.

8.2 The complete photo block shall be protected for CVFR and IFR photographic aircraft operating within a flight planned photo block.

9.0 Canadian Minimum Navigation Performance Specifications (CMNPS) Minima

9.1 Vertical Separation

9.1.1 The control procedures may be applied to CMNPS certified aircraft operating within CMNPS airspace and the CMNPS transition area.

9.1.2 Vertical separation shall be established between aircraft on the same track that are converging to an area of overlap, when they are at least 60 miles or 1 degree of latitude apart if:

- (a) the tracks are not laterally separated; and
- (b) longitudinal separation does not exist.

9.1.3 Vertical separation is not required between aircraft on the same track that are diverging from an area of overlap, when they are at least 60 miles or 1 degree of latitude apart.

9.1.4 Vertical separation shall be applied between aircraft on reciprocal tracks from 15 minutes before, until 15 minutes after their estimated passing time.

9.1.5 One of the following conditions shall be met when discontinuing vertical separation between aircraft on reciprocal tracks:

- (a) both aircraft have reported over a common point and 10 minutes have elapsed after their estimated passing; or
- (b) position reports indicate the aircraft have passed and are 60 miles apart.

9.1.6 If longitudinal separation will not exist, vertical separation shall be applied between aircraft on crossing tracks as follows:

- (a) vertical separation shall be established between aircraft when they are at least 60 miles or 1 degree of latitude apart; or
- (b) vertical separation may be discontinued between aircraft that have passed and are at least 60 miles or 1 degree of latitude apart.

9.2 Lateral Separation

9.2.1 Aircraft shall be separated laterally by 60 miles based on the distance between track centre lines.

9.2.2 The following conditions shall be met when aircraft are separated laterally with reference to their difference in latitude, using 1 degree instead of 60 miles, provided that, in any interval of 10 degrees of longitude, the change in latitude of one of the tracks does not exceed:

- (a) 1 degree in the area between 70 degrees North and 80 degrees North;
- (b) 2 degrees in the area between 58 degrees North and 70 degrees North; and
- (c) 3 degrees in the area south of 58 degrees North.

9.2.3 Aircraft shall be separated laterally by 60 miles while they are operating on tracks that:

- (a) are north of 80 degrees North; or
- (b) have a change in latitude which exceeds the allowable limits in Chapter 2, subsection 10.4.2.

9.2.4 Aircraft using area navigation systems shall be separated by 30 miles from the airspace to be protected for aircraft that are using ground-based NAVAIDs.

9.2.5 Lateral separation shall be applied to aircraft on reciprocal tracks that do not coincide, provided that:

- (a) estimates indicate that the outbound aircraft will be at least 10 minutes beyond the point where lateral separation is achieved, when the inbound aircraft reaches the point where lateral separation is lost; or
- (b) estimates indicate that the inbound aircraft is at least 10 minutes away from the point where lateral separation will be lost, when the outbound aircraft reaches the point where lateral separation is achieved.

9.3 Longitudinal Separation

9.3.1 Aircraft shall be separated by 15 minutes if they will follow:

- (a) the same track; or
- (b) tracks that are not laterally separated.

9.3.2 Aircraft on crossing tracks shall be separated by one of the following minima:

- (a) 20 minutes, if either aircraft is maintaining a ground speed less than 340 knots;
- (b) 15 minutes, provided that both aircraft are maintaining ground speeds of 340 knots or greater.

9.4 Longitudinal Separation - Mach-Number Technique

9.4.1 Mach-number technique shall be applied if required for separation of aircraft entering CMNPS airspace. (R)

Reference: Mach-number/TAS - Clearances and Reports; RAC 8.2, A.I.P. Canada (TP2300E).

9.4.2 Aircraft shall be separated by 10 minutes provided that:

- (a) the Mach-number technique is used;
- (b) the aircraft are in level flight, climbing or descending;
- (c) the aircraft are operating on the identical track or continuously diverging tracks;
- (d) the aircraft have reported over a common point; and
- (e) the required longitudinal separation will be maintained until tracks diverge; and, when tracks diverge, the required lateral separation and at least 5 minutes longitudinal separation will exist at the point where lateral separation is achieved.

9.4.3 A faster succeeding aircraft shall be separated from a slower preceding aircraft by ensuring that not less than 10 minutes is maintained:

- (a) until tracks diverge; and, when tracks diverge, the required lateral separation and at least 5 minutes longitudinal separation will exist at the point where lateral separation is achieved; or
- (b) to a point at which another form of separation will be achieved.

9.4.4 The 10-minute separation minimum referred to in Chapter 2, subsection 9.4.3 may be reduced using the table, provided that the following conditions are met: (N)

- (a) the preceding aircraft is maintaining a greater Mach-number than the succeeding aircraft; and
- (b)
 - (i) the aircraft have reported over a common point, or
 - (ii) radar, DME, or RNAV distance is used to ensure that the appropriate time interval exists and will exist at the common point.

Mach Difference	Minimum Separation
0.02	9 minutes
0.03	8 minutes
0.04	7 minutes
0.05	6 minutes
0.06	5 minutes

NOTE:

If the aircraft will follow continuously diverging tracks and the required lateral separation will be achieved not later than 20 minutes after the preceding aircraft has passed the common point, the requirement to have 5 minutes longitudinal separation where lateral separation is achieved does not apply.

10.0 Required Navigation Performance Capability (RNP) Minima

10.1 General

10.1.1 Unless otherwise indicated, the criteria in this section shall be applied to RNP certified aircraft operating within RNP airspace, as specified in the *Designated Airspace Handbook* (TP1820E).

10.1.2 Distance-based separation requires Direct Controller - Pilot Communications (DCPC).

10.2 Vertical Separation

10.2.1 Vertical separation is not required between RNP-C certified aircraft on reciprocal tracks, provided that RNAV positions indicate they have passed and are 30 miles apart.

10.3 Lateral Separation

10.3.1 RNP-C certified aircraft shall be protected by:

- (a) 10 miles each side of the track, if operating off airways; or
- (b) the airspace to be protected for an airway, if operating on airways.

10.4 Longitudinal Separation

10.4.1 RNP-C certified aircraft operating on the same track, or crossing tracks, shall be separated by a minimum of 10 minutes.

10.4.2 RNP-C certified aircraft operating on the same track shall be separated by 30 miles, provided that the distance is determined through RNAV from a common point.

10.4.3 RNP-C certified aircraft on crossing tracks shall be separated by 30 miles, as determined by RNAV distance from the crossing point.

10.4.4 If aircraft are on crossing tracks or converging to or diverging from an area of overlap at an angle of less than 45 degrees, vertical separation shall be established before the RNP-C certified aircraft reaches a point 15 miles from the area of overlap, as determined by RNAV.

10.5 Longitudinal Separation - Mach-Number Technique

10.5.1 RNP-C certified aircraft shall be separated by 10 minutes provided that:

- (a) the Mach-number technique is used;
- (b) aircraft are in level flight, climbing or descending;
- (c) aircraft are operating on the same track or continuously diverging tracks;
- (d) aircraft have reported over a common point; and
- (e) the required longitudinal separation will be maintained until tracks diverge; and, when tracks diverge, the required lateral separation and at least 5 minutes longitudinal separation will exist at the next significant point.

10.5.2 The 10-minute separation minima referred to in Chapter 2, subsection 10.5.1 may be reduced in accordance with the table, provided that the following conditions are met: (N)

(a)

(i) the preceding aircraft is maintaining a greater Mach-number than the succeeding aircraft, and

(ii) the aircraft have reported over the same NAVAID, or fix derived from NAVAIDs; or

(b) radar, DME, or any RNAV distance is used to ensure that the appropriate time interval exists and will exist at the common point.

Mach Difference	Minimum Separation
0.02	9 minutes
0.03	8 minutes
0.04	7 minutes
0.05	6 minutes
0.06	5 minutes

NOTE:

The 5-minute longitudinal separation minimum is no longer required, if the aircraft are following continuously diverging tracks and the required lateral separation will be achieved at the next significant point.

10.5.3 A faster succeeding aircraft shall be separated from a preceding aircraft by ensuring that a not-less-than 10-minute longitudinal separation is maintained:

(a) until tracks diverge, provided that the required lateral separation and at least 5 minutes longitudinal separation will exist at the next significant point; or

(b) to a point at which another form of separation will be achieved.

11.0 Altitude Reservations

11.1 General

11.1.1 The separation minima contained in this section shall be applied to provide separation between:

(a) ALTRVs;

(b) ALTRVs and predetermined unreserved tracks in controlled airspace; and

(c) aircraft operating outside an ALTRV, and:

- (i) aircraft operating within a moving ALTRV,
- (ii) the protected airspace of a moving ALTRV, or
- (iii) the geographical and vertical limits of a stationary ALTRV.

11.1.2 A non-participating military aircraft need not be separated from a military ALTRV provided that the non-participating aircraft is operating:

- (a) “at least 1,000 feet on top”; or
- (b) in accordance with VFR.

11.2 Vertical Separation

11.2.1 Aircraft shall be separated vertically by one of the following minima:

- (a) FL290 and below – 1,000 feet;
- (b) above FL290 – 2,000 feet.

11.3 Lateral Separation

11.3.1 ALTRVs shall be separated laterally by:

- (a) the appropriate lateral separation minima; or
- (b) 30 miles for CMNPS certified aircraft from:
 - (i) the protected airspace of a moving ALTRV, or
 - (ii) the geographical limits of a stationary ALTRV.

11.3.2 For a stationary ALTRV, separation exists if there is no overlap of the boundary of the ALTRV with the boundary of another ALTRV.

11.4 Longitudinal Separation

11.4.1 Apply the following longitudinal separation minima:

- (a) within domestic FIRs excluding the ACA - 30 minutes;
- (b) within the ACA - 60 minutes.

11.5 Military IFR Formation Flights

11.5.1 Military IFR formation flights shall be separated as follows:

(a) Non-radar

- (i) for a standard formation flight - standard separation minimum shall be applied, and
- (ii) for a non-standard formation flight - increased separation minimum shall be applied when the lateral or longitudinal spacing of the aircraft is in excess of the criteria specified for a standard formation.

(b) Radar

- (i) for a standard formation flight - add one mile to the appropriate radar separation minima,
- (ii) between two standard formation flights - add two miles to the appropriate radar separation minima, and
- (iii) for a non-standard formation flight - apply the appropriate radar separation minima to the perimeter of the airspace encompassing the non-standard formation, or from the outermost aircraft of the non-standard formation, whichever applies.

11.6 USAF Bomber Cell Flights

11.6.1 A USAF Bomber cell formation flight shall be separated from other aircraft as follows:

- (a) vertical separation shall be applied from the highest or lowest altitude occupied by a cell aircraft as appropriate;
- (b) lateral separation shall be applied as for a single aircraft;
- (c) longitudinal separation shall be applied from the leading or trailing cell aircraft as appropriate.

11.7 Jet Approaches and Penetration Turn Procedures

11.7.1 The following conditions shall be met when a succeeding military jet aircraft is cleared for the same high-altitude approach procedure other than a straight-in approach:

- (a) the preceding aircraft has reported intercepting the inbound track;
- (b) DCPC is established with each aircraft;
- (c) the initial penetration altitude of each aircraft is not lower than that of the preceding aircraft;
- (d) the preceding aircraft will not execute a circling procedure before landing; and
- (e) the missed approach procedure does not involve a reversal of heading.

11.7.2 The following conditions shall be met when a succeeding military jet aircraft is cleared for the same straight-in TACAN approach:

- (a) there is a minimum of 10 miles separation between the aircraft;
- (b) two DME fixes are used to establish an approach interval that will ensure that the required separation minimum is maintained;
- (c) DCPC is established with each aircraft;
- (d) the initial penetration altitude of each aircraft is not lower than that of the preceding aircraft;
- (e) the preceding aircraft will not execute a circling procedure before landing; and
- (f) the missed approach procedure does not involve a reversal of heading.

CHAPTER 3 - RADAR SEPARATION

1.0 *Application of Radar Separation*

1.1 The following conditions shall be met when radar separation is applied between an aircraft taking-off or executing a missed approach, and other radar controlled aircraft:

- (a) the departing or missed approach aircraft will be radar identified within 1 mile of the end of the runway;
- (b) radar separation will be established at that point; and
- (c) continuing separation from all known IFR or CVFR aircraft will be assured.

1.2 The following conditions shall be met when radar separation is applied between a radar identified aircraft and an aircraft that is not radar identified:

- (a) one aircraft is cleared to climb or descend through the altitude of the other aircraft;
- (b) the performance of the primary radar system is adequate and primary radar targets are being displayed;
- (c) the airspace in which the separation is applied is 10 miles or more from the extremity of reliable primary radar coverage provided;
- (d) the non-identified aircraft is a type that can be expected to give an adequate primary radar return in the airspace in which the separation is being applied;
- (e) if both aircraft are proceeding in the same direction, the identified aircraft is vectored, before climb or descent, to the extent necessary to ensure its target has not obscured that of the non-identified aircraft; and
- (f) radar separation is maintained from all observed targets until non-radar separation is established from the non-identified aircraft.

2.0 *Radar Separation Minima*

2.1 Aircraft shall be separated using one of the following minima: (N)

- (a) 5 miles; or
- (b) 3 miles, where:
 - (i) terminal control service is being provided that,
 - (ii) a maximum range of 60 miles is displayed on the radar display, and
 - (iii)
 - (A) altitude readouts for both aircraft are displayed, or
 - (B) both aircraft are at or below 15,000 feet ASL;

(c) 2.5 miles between aircraft established on the same final approach course within 10 miles of the landing runway provided that:

- (i) the leading aircraft is not a heavy,
- (ii) the following aircraft's weight category is the same or heavier than that of the leading aircraft, and
- (iii) the runway is bare;

(d) 1 mile provided that:

- (i) the operation is in a mosaicked environment, and:
 - (A) at least one of the aircraft is VFR,
 - (B) a maximum range of 40 miles is displayed on the radar display,
 - (C) altitude readouts are displayed for both aircraft,
 - (D) the position of the centre of the radar display is such that the maximum range that this service can be provided does not exceed 120 miles from the preferred or supplementary radar;
- (ii) the operation is in a non-mosaicked environment, and:
 - (A) at least one of the aircraft is VFR,
 - (B) a maximum range of 40 miles is displayed on the radar display,
 - (C) altitude readouts are displayed for both aircraft,
 - (D) the position of the centre of the radar display is such that the maximum range that this service can be provided does not exceed 60 miles from the Radar Site Equipment (RSE);

(e) target resolution provided that:

- (i) at least one of the aircraft is VFR,
- (ii) a maximum range of 40 miles is displayed on the radar display,
- (iii) altitude readouts are displayed for both aircraft,
- (iv) PPS size is selected at 2 or greater,
- (v) the position of the centre of the radar display is such that the maximum range this service can be provided does not exceed 60 miles from the RSE.

(f) 10 miles if the source radar is not an RSE.

NOTE:

These minima do not apply when an arriving aircraft is separated from a departing aircraft in accordance with Chapter 3, subsection 6.2.1 - Departure Versus Arrival.

2.2 The following conditions shall be met when discontinuing vertical separation between aircraft on reciprocal tracks if observed on radar that they have passed each other and:

- (a) are 3 miles apart; or
- (b) the PPSs do not overlap, provided that:
 - (i) altitude readouts are displayed for both aircraft, or
 - (ii) both aircraft are at or below 15,000 feet ASL;
- (c) 5 miles if the source radar is not an RSE.

2.3 Aircraft shall be separated from the boundary of adjoining airspace in which radar separation is being used, in accordance with the following table:

If:	And If:	And If:	Separation Required:
			2.5 miles
	Adjoining airspace is controlled with RSE/RDPS	1. Terminal control service is being provided; 2. A maximum of 60 miles is displayed on the radar display; and 3. (a) An altitude read-out is displayed for the aircraft; or (b) The aircraft is at or below 15,000 feet ASL.	1.5 miles
RSE/RDPS			5 miles
	Adjoining airspace is not controlled with RSE/RDPS	1. Terminal control service is being provided; 2. A maximum of 60 miles is displayed on the radar display; and 3. (a) An altitude read-out is displayed for the aircraft; or (b) The aircraft is at or below 15,000 feet ASL.	3 miles
NON - RSE/RDPS			5 miles

2.4 A radar controlled aircraft shall be separated from the boundary of airspace in which non-radar separation is being used, or from the boundary of Class F restricted areas by:

(a) 5 miles; or

(b) 3 miles, provided that:

(i) a maximum range of 60 miles is displayed on the radar display, and

(ii)

(A) an altitude readout is displayed for the aircraft, or

(B) the aircraft is at or below 15,000 feet ASL;

(c) 10 miles, if the source radar is not an RSE.

2.5 If vertical separation will not be applied, aircraft shall be vectored to ensure that the PPS will not penetrate a Class F advisory area displayed on the radar display.

2.6 Vertical separation shall be established for an aircraft that will overfly a Class F advisory area, prior to the PPS penetrating the area as displayed on the radar display, and maintained until the PPS is clear of the area.

2.7 If the source radar is a non-RSE radar, separation shall be provided that during any time that the target is less than 5 miles from the Class F advisory area displayed on the radar map.

3.0 *Wake Turbulence Minima*

3.1 Wake turbulence radar minima shall be applied between aircraft that are being provided that radar service if one aircraft:

(a) is operating directly behind and less than 1,000 feet below a preceding aircraft;

(b) will cross directly behind a climbing or descending aircraft; or

(c) will cross behind a climbing or descending aircraft. If the following aircraft is at the same altitude or less than 1,000 feet below the altitude vacated by the preceding aircraft at the crossing position, the following aircraft shall be separated by one of the following minima:

(i) heavy behind a heavy - 4 miles,

(ii) medium behind a heavy - 5 miles,

(iii) light behind a heavy - 6 miles,

(iv) light behind a medium - 4 miles.

3.2 A 2-minute separation shall be applied at the point of flight path intersection, if an IFR departure from an adjacent airport will cross behind and less than 1,000 feet below a preceding IFR aircraft.

4.0 Category II ILS Approaches

4.1 When Category II ILS approaches are being conducted, aircraft on approach shall be separated by 5 miles or more.

4.2 When Category II ILS approaches are being conducted, departing aircraft shall be separated from arriving aircraft by 4 miles or more.

5.0 Obstruction Clearance

5.1 Adequate terrain clearance shall be provided that above a prominent obstruction by one of the following minima:

(a) 5 miles, where the position of the prominent obstruction is indicated on the radar display; or

(b) 3 miles, where:

(i) terminal control service is being provided that,

(ii) a maximum range of 60 miles is displayed on the radar display, and

(iii) the prominent obstruction is enclosed within a buffer on the radar display.

6.0 Radar Departures

6.1 General

6.1.1 An initial departure clearance shall be based on non-radar separation minima and non-radar routes, to provide for radar or communication failure. (N)

NOTE:

This provision does not apply if aircraft will be radar separated in accordance with Chapter 3, section 1.2 - Application of Radar Separation.

6.2 Departure Versus Arrival

6.2.1 The following conditions shall be met when permitting a departing aircraft to take-off in a direction which differs by 45 degrees or more from the reciprocal of the track of an arriving aircraft:

(a) the arriving aircraft is on final approach;

(b) the arriving aircraft is radar identified;

(c)

- (i) the departing aircraft is airborne when the arriving aircraft is not less than 2 miles from the threshold of the landing runway;
- (ii) the departing aircraft has commenced its take-off roll when the arriving aircraft is not less than 2 miles from the threshold of the landing runway, provided that:
 - (A) separation will increase to a minimum of 3 miles (5 miles, if more than a 60 mile range is displayed on the radar display) within 1 minute after take-off;
- (iii) if crossing runways are used, the departing aircraft has crossed the centre line of the runway on which the landing will be made when the arriving aircraft is not less than:
 - (A) 2 miles from the threshold of the landing runway, or
 - (B) 2 miles from the intersection of the departure and arrival runways;

(d) lateral separation from the specified missed approach course is assured immediately after take-off if the possibility of a missed approach exists;

(e) the arriving aircraft will not carry out a circling procedure.

6.2.2 The following conditions shall be met when a departing aircraft is authorized to take-off from a runway that is parallel to a runway being used by an arriving aircraft:

(a) the runway thresholds are even, and the runway centre lines are 2,500 feet or more apart (centre line to centre line); or

(b) the runway thresholds are staggered and:

- (i) if the arriving aircraft is approaching the nearer runway, the required distance between runway centre lines may be 100 feet less than 2,500 feet for each 500 feet that the thresholds are staggered.
- (ii) if the arriving aircraft is approaching the farther runway, the required distance between runway centre lines must be 100 feet more than 2,500 feet for each 500 feet that the thresholds are staggered.

(c) in addition to (a) and (b), the following conditions shall also be met:

- (i) the aircraft are informed that simultaneous operations are in effect,
- (ii) the aircraft are landing in the same direction being used for take-off and are making either straight-in or visual approaches which are being monitored on radar,
- (iii) the departing aircraft are assigned headings that diverge immediately after take-off by 30 degrees or more from the missed approach of the arriving aircraft,
- (iv) radar identification of the departing aircraft will be established within one mile of the runway,

- (v) a maximum of 60 miles is displayed on the radar display,
- (vi) neither a departing aircraft nor a missed approach aircraft is cleared nor permitted to turn toward the flight path of the other, unless another form of separation has been achieved.

6.3 Departure Versus Departure

6.3.1 The following conditions shall be met when a departing aircraft is authorized to take-off from a runway that is parallel to a runway being used by another departing aircraft:

- (a) the runways are 2,500 feet or more apart (centre line to centre line);
- (b) both aircraft will follow assigned tracks that diverge by 15 degrees or more immediately after take-off;
- (c) radar identification of both aircraft will be established within 1 mile of the runway used for take-off;
- (d) a maximum of 60 miles is displayed on the radar display; and
- (e) neither aircraft is cleared nor permitted to turn towards the departure path of the other unless another form of separation has been achieved.

6.3.2 The following conditions shall be met when simultaneous take-offs are authorized for aircraft departing from non-intersecting runways:

- (a) the runway centre lines diverge by 15 degrees or more;
- (b) radar identification of both aircraft will be established within 1 mile of the runway used for take-off;
- (c) a maximum of 60 miles is displayed on the radar display;
- (d) when required, a wake turbulence minimum is applied; and
- (e) neither aircraft is cleared nor permitted to turn towards the other unless another form of separation has been achieved.

6.3.3 The following conditions shall be met when a succeeding aircraft is authorized to take-off from an intersecting runway:

- (a) the runway centre lines diverge by 15 degrees or more;
- (b) the previous aircraft has passed the point of the runway intersection;
- (c) when required, a wake turbulence minimum is applied to the succeeding aircraft;
- (d) radar identification of both aircraft will be established within 1 mile of the runway used for take-off;
- (e) a maximum of 60 miles is displayed on the radar display; and
- (f) neither aircraft is cleared nor permitted to turn towards the departure path of the other unless another form of separation has been achieved.

6.4 Successive Departures

6.4.1 The following conditions shall be met when separating successive departing aircraft by 1 mile from the same, or parallel runways that are separated by less than 2,500 feet:

- (a) radar identification of both aircraft will be established within 1 mile of the end of the runway used for take-off;
- (b) a maximum of 60 miles is displayed on the radar display;
- (c) both aircraft are assigned tracks that diverge immediately after take-off as follows:
 - (i) if the speed of the following aircraft will exceed that of the leading aircraft;
 - (A) turn the leading aircraft 30 degrees or more; and
 - (B) do not authorize the following aircraft to depart until the leading aircraft has commenced the turn; or
 - (ii) if the speed of the following aircraft will not exceed that of the leading aircraft, turn either aircraft 15 degrees or more, or turn both aircraft immediately after take-off such that the sum of the turns equals 15 degrees or more;
- (d) successive departing aircraft are not authorized to turn towards the same side of the runway centre line;
- (e) neither aircraft is cleared nor permitted to turn towards the departure path of the other, unless another form of separation has been achieved; and
- (f) wake turbulence minima are applied when required.

7.0 Visual Approaches

7.1 The following conditions shall be met when an aircraft is cleared for a visual approach:
(N)

- (a) the aircraft is identified and provided radar service;
(amended 2011/06/30)
- (b) the reported ceiling at the destination airport is 500 feet or more above the minimum IFR altitude and the ground visibility is 3 statute miles or more;
- (c) separation, other than visual, is provided from other IFR or CVFR aircraft except that the aircraft may be instructed to maintain visual separation from preceding arriving IFR or CVFR aircraft when cleared for a visual approach;
(amended 2011/06/30)

(d) the aircraft reports sighting:

(i) the airport if there is no preceding IFR or CVFR aircraft,
(amended 2011/06/30)

(ii) the airport if separation from preceding IFR or CVFR aircraft is maintained by ATC,
or
(amended 2011/06/30)

(iii) the aircraft that ATC instructs to follow;
(amended 2011/06/30)

(e) the aircraft will complete its approach by following a flight path which will not compromise separation with other IFR or CVFR aircraft.

NOTE:

Visual approaches may be requested by pilots or initiated by controllers to gain an operational advantage for arrivals operating in good weather conditions. Pilots cleared for a visual approach are responsible for compliance with published noise abatement procedures, wake turbulence separation and avoidance of Class F airspace.

7.2 Visual Approaches to Multiple Runways

7.2.1 IFR separation shall be maintained until visual separation is applied when conducting visual approaches to multiple runways.

7.2.2 In addition to the requirements in Chapter 3, section 7.0 - Visual Approaches, the following conditions shall be applied when visual approaches are conducted to parallel, intersecting and converging runways:

(a) parallel runways separated by less than 2,500 feet:

(i) IFR separation is maintained until the aircraft reports sighting any preceding aircraft on final approach to the adjacent runway,

(ii) the aircraft is instructed to maintain visual separation from the reported traffic,

(iii) a heavy aircraft is not permitted to pass any other aircraft, or a medium aircraft is not permitted to pass a light aircraft;

(b) parallel runways separated by 2,500, but less than 4,300 feet and both aircraft are being vectored for visual approaches:

(i) separation, other than visual, is maintained until the aircraft are established on a heading which will intercept the extended runway centre line by 30 degrees or less, and

(ii) both aircraft have received and acknowledged the visual approach clearance;

(c) parallel runways separated 4,300 feet or more, and both aircraft are being vectored for visual approaches, separation, other than visual, is maintained until one of the aircraft has received and acknowledged the visual approach clearance;

(d) if one of the aircraft is being vectored for a visual approach while another is being vectored for an instrument approach, separation, other than visual, is maintained until the aircraft conducting the visual approach has received and acknowledged the visual approach clearance;

(e) intersecting and converging runways:

(i) IFR separation shall be maintained until the aircraft has received and acknowledged the visual approach clearance,

(ii) visual approaches may be conducted simultaneously with visual or instrument approaches to another runway.

8.0 Simultaneous Operations

8.1 Simultaneous Independent Parallel ILS Approaches

8.1.1 The following conditions shall be met when aircraft are cleared for straight-in ILS approaches at locations where simultaneous independent parallel ILS approaches have been approved:

(a) the Arrival Controller:

(i) vectors each aircraft:

(A) to provide a minimum of 1 mile of straight and level flight prior to final approach course interception, and

(B) to intercept the final approach course, at an angle of 30 degrees or less, and at a point 2 miles or more from where final descent will begin;

(ii) provides a minimum of 1,000 feet vertical or 3 miles radar separation until both aircraft are within their normal operating zones and established on their respective localizers;

(iii) applies appropriate separation from other IFR or CVFR aircraft except for aircraft established on the parallel localizer and within the Normal Operating Zone (NOZ) for the parallel runway; *(N)*

NOTE:

Aircraft established on a final approach course are considered separated from aircraft established on an adjacent final approach course provided that it is apparent that neither aircraft is on a track that will cause it to enter the No Transgression Zone (NTZ).

(b) the Monitor Controller:

(i) monitors all simultaneous independent approaches;

(ii) maintains a listening watch on the appropriate airport control frequencies;

(iii) considers the aircraft to be the centre of the PPS;

(iv) issues necessary instructions and information, on the appropriate airport control or dedicated frequency, so as to ensure that aircraft remain within the applicable NOZ as follows:

(A) immediately, when an aircraft is observed to overshoot a turn-on or approach the edge of the NOZ, vectors the aircraft back to the centre line and provides position information, or

(B) when an aircraft is observed to continue on a track which will penetrate the NTZ, immediately vectors the aircraft back to the centreline;

(C) when it is observed that an aircraft has penetrated or is about to penetrate the NTZ, IMMEDIATELY:

(I) issues instructions to the aircraft on the adjacent localizer to alter its heading so as to avoid the deviating aircraft, and

(II) co-ordinates, as appropriate, to accommodate any probable missed approach;

(v) terminates monitoring, if:

(A) visual separation is applied;

(B) the aircraft reports the runway insight; or

(C) the aircraft is observed to be 1 mile from the runway threshold.

8.2 Simultaneous Dependent Parallel ILS Approaches

8.2.1 The following conditions shall be met when aircraft are cleared for straight-in ILS approaches at locations where simultaneous dependent parallel ILS approaches have been approved:

(a) the Arrival Controller:

(i) vectors each aircraft to intercept the final approach course at an angle of 30 degrees or less, and at a point 2 miles or more from where final descent will begin for a straight-in landing;

(ii) provides a minimum of 1,000 feet vertical or 3 miles radar separation until both aircraft are established inbound on their respective localizers;

(iii) provides a minimum of 1.5 miles radar separation diagonally between successive aircraft on adjacent localizer courses when runway centre lines are at least 2,500 feet, but no more than 4,300 feet apart; and

(iv) provides a minimum of 2 miles radar separation diagonally between successive aircraft on adjacent localizer courses when runway centre lines are more than 4,300 feet, but no more than 9,000 feet apart.

8.3 Simultaneous Arrivals Arrival/Departure

8.3.1 The following conditions shall be met when an aircraft is cleared to conduct a precision instrument approach while another aircraft is simultaneously conducting a precision instrument approach to a converging or intersecting runway:

- (a) radar separation is maintained until:
 - (i) one aircraft has landed,
 - (ii) the tower is able to apply visual separation, or
 - (iii) another form of separation is established.



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CANADIAN AVIATION REGULATIONS

PART VIII - AIR NAVIGATION SERVICES

STANDARD 824 - RUNWAY VISIBILITY ASSESSMENT

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NOTE

All amendments to the CARs will be indicated by the Coming into Force date, immediately following the amended text.

RECORD OF AMENDMENTS

[illegible]

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ASSESSMENT

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PART VIII — AIR NAVIGATION SERVICES

STANDARD 824 — RUNWAY VISIBILITY ASSESSMENT

(amended 2006/12/01)

824.22 *Interpretation*

In these standards

“conversion table” means a table relating the number of visible runway edge lights to a distance in feet; (*table de conversion*)

“point of observation” means a fixed location near the threshold of the runway, such as the taxiway holding position for the taxiway adjoining the runway threshold, or at a point adjacent to the runway threshold, from which the distance to visibility markers is known. (*point d’observation*)

VISIBILITY MARKERS AND VISIBILITY MARKERS CHARTS

824.23 *Visibility Markers*

- (1) Visibility markers are located as to be representative of the runway conditions.
- (2) Visibility markers are located within 10 degrees of the runway centre line.
- (3) Visibility markers consist of dark objects of suitable dimension, and of lights of moderate intensity.

Visibility Markers Chart

(4) A visibility markers chart includes:

- (a) the visibility markers used to assess runway visibility, showing their distances in feet, and bearings from the point of observation;
- (b) the identification of the day and night visibility markers in their proper positions by means of the designated symbols listed on the chart; and
- (c) the clear identification of the point of observation.

- (5) Runway edge lights are not indicated on the visibility markers chart.

Note: The distance should be determined to the nearest 100 feet. Obstruction lights on towers and buildings and the various marker lights around an airport may be used for visibility markers.

ASSESSMENT AND REPORTING OF RUNWAY VISIBILITY

824.25 Steps to assess runway visibility

- (1) Runway edge lights may be used to assess the runway visibility.
- (2) The aerodrome operator establishes a conversion table if runway edge lights are used to assess runway visibility.
- (3) When runway edge lights are used to assess the runway visibility, the qualified person uses a conversion table to determine the distance assessed.
- (4) A qualified person stands at the point of observation and, without using any optical devices to enhance their normal distance vision:
 - (a) assesses in the runway direction the farthest:
 - (i) visible runway edge lights; or
 - (ii) visibility markers that can be seen and identified;
 - (b) from the assessment in paragraph (a), determines the distance, in feet to the nearest 100 foot increment, using the conversion table or the visibility markers chart; and
 - (c) immediately reports the distance assessed, to the ATS facility that serves the aerodrome, if available, or to the person who requested the report, as the runway visibility along the specified runway in the following format:

“RUNWAY VISIBILITY, RUNWAY [runway number] ASSESSED AS [distance assessed] FEET AT [time] UTC”, to the nearest 100 foot increment.

Note: The term “optical devices” does not include spectacles or contact lenses that the qualified person usually wears for normal distance vision.

- (5) If the runway visibility varies during the assessment, the qualified person reports the lowest value observed.

- (6) The qualified person does not report any weather phenomena that is reducing the runway visibility unless the qualified person does so in accordance with section 804.01.

Note: It is preferable that observations not be made through a window, especially at night.

Range of Values to be Reported

(7) The lowest limit of the reporting range of runway visibility is 200 feet.

(8) Where the runway visibility is below 200 feet, it is reported that the runway visibility is less than 200 feet.

(9) The upper limit of the reporting range of runway visibility is 6,000 feet.

(10) Where the runway visibility is above 6,000 feet, it is reported that the runway visibility is greater than 6,000 feet.

824.26 *Qualifications and Training*

The training to assess runway visibility ensures, at a minimum, that the qualified person

- (a) can identify the location of each point of observation;
- (b) can identify the visibility markers for each point of observation;
- (c) can identify the runway edge lights;
- (d) understands the use of the conversion table and the visibility markers chart;
- (e) understands the format to be used to report runway visibility; and
- (f) can review the steps to assess runway visibility.



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*PART IX
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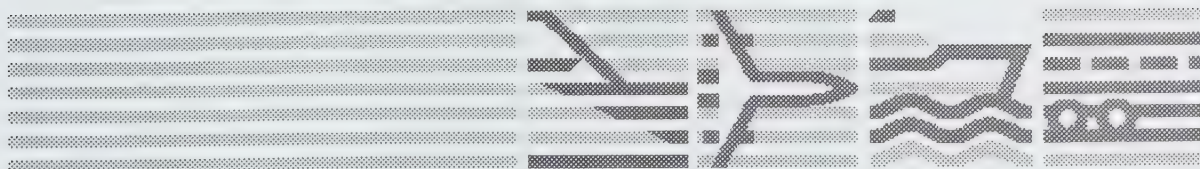
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CANADIAN AVIATION REGULATIONS

PART IX - REPEALS AND COMING INTO FORCE

Repeals

900.01 The following Regulations are repealed:

- (a) the *Air Regulations*, C.R.C., c. 2;
- (b) the Canadian Aviation Document Regulations, SOR/86-595;
- (c) the Private Aircraft Minimum Liability Insurance Regulations, SOR/90-357;
- (d) the Identification of Aircraft and Other Aeronautical Products Regulations, SOR/90-590;
- (e) the Aircraft Marking and Registration Regulations, SOR/90-591;
- (f) the Airspace Structure, Classification and Use Regulations, SOR/93-458;
- (g) the *Airport Regulations*, SOR/94-613; and
- (h) the Aerodrome Regulations, SOR/94-614.

900.02 The heading "*Air Regulations*"¹ in the schedule to the *Designated Provisions Regulations*² and the portion of the schedule³ after that heading and before the heading "*Air Carrier Security Regulations* (Air Regulations, Series VIII, No. 1)" are repealed.

Coming Into Force

900.03 These Regulations come into force on October 10, 1996.

¹ SOR/92-287

² SOR/86-596

³ SOR/95-504

